

## SIERRA CLUB BULLETIN.

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### JOSEPH LECONTE IN THE SIERRA.

BY FRANK SOULÉ.

[NOTE.—Professor LeConte was a charter member of the Sierra Club.—EDITOR.]

"If you would know a man, go camping with him," is a common saying in California, where a summer's outing in the mountains is a pleasure almost universally enjoyed. It is a custom which brings home to us all a precious share of camp-life experience. Indeed, how could it fail to do so, when friends and acquaintances tramp or ride together over the long rough roads and trails day after day, and even night after night; pitch camp, build camp-fires, boil pots, and mess from the same dish; fish, in friendly rivalry, *vis-à-vis*, on the banks of a wild, foaming stream, or stalk together in the fresh morning twilight a big bright-eyed but wary stag?

Whether chumming on the hot and dusty trail or clambering by means of clutching hands and hobnailed shoes over the rugged boulders of a Sierra peak, how the bond of fellowship develops and strengthens, just as among brother soldiers in an arduous campaign!

How thoughts "will out" and fancies free themselves, until each man feels that he knows the other's inmost thoughts, his manner unaffected, and the features of his soul itself!

The open-air bivouacs, with their attendant physical fatigue and mental rest and relaxation, where all gather round the evening's council-fire and commune, either noisily or silently in spirit, lead to the voicing of one's most cherished ideas and dearest ambitions, aspirations, and confidences.

It was through such favorable conditions and surroundings as those just mentioned that I came really to know and to understand the late Joseph LeConte; and to fully appreciate his lofty nobility of soul, his devotion to the philosophy of the universe, and to realize his breadth and depth of thought, his kindly, gentle nature, and his crowning possession, the undisputed title of "one of the world's best gentlemen."

The writer of this article had the good fortune to be a member of the pioneer party which accompanied Professor LeConte to the Yosemite Valley, Tuolumne Meadows, Mono Lake, and Lake Tahoe during the summer vacation of the University of California in 1870. Such expeditions even from the State at large were rare in those days; many of the roads and trails were bad or uncertain, or perhaps both combined; but Nature in all her beauty and grandeur was there then, as she is now, and left upon our memories a picture of her magnificence never in this life to be effaced. And among the dearest of all the recollections of that tour are those relating to our personal contact and close association with "Doctor Joe," as we all lovingly and respectfully called him.

The writer was favored by being made the recipient of much of his society and conversation during this jaunt. He jogged beside the Doctor on the roads and trails, sat next him at the camp-table, and often shared with him at night a blanket-couch and cover.

The details of this tour have been admirably recorded by Doctor Joe in his "Ramblings through the High Sierra,"

recently republished by the Sierra Club; and the writer will not repeat nor enlarge upon them, but will here relate his personal impressions of his friend. Although a teacher associated with Doctor LeConte during the infant days of the University of California, when it was cradled in Oakland, and though from first acquaintance with him an admiring and enrapt attendant upon the LeConte lectures, given publicly or in academic halls by the dignified, enthusiastic, and learned professor, he had not come to fully understand, appreciate, and venerate this beautiful character until the experiences of this first Sierra outing.

The writer was with him not only in this first, but also in the last, of his many mountain excursions; and the impression and estimate formed of this great scientist and philosopher were intensified by time and confirmed by ultimate association.

Immediately upon the departure of our cavalcade from Oakland in 1870, I was moved by the intense love of nature that saturated Doctor Joe's mind and soul. He loved all men and all things. Even the dust in the road, the weeds by the hedgerow, and the shrubs on the hillside attracted his attention and drew forth his analysis and deduction.

The breadth and profundity of knowledge that he displayed in his own modest way upon this journey were remarkable. Botany, chemistry, geology, physiology, astronomy, philosophy, and the classics were ready at his call. Often when standing upon a high peak of the Sierra, or during a tramp through a dark forest of giant trees, or when gazing upward from a vast chasm of the Yosemite, his face was illumed by an inward light, and his voiced thoughts seemed inspiration.

Poetry and polite literature were to him a mental relaxation. He quoted poetry by the volume, and seemed to have an unlimited store in his memory. The beautifully descriptive and the humorous were usually on these occa-

sions given his preference. He was full of anecdote seasoned by wit and humor of a high order; and many a tedious march was converted into a column of jollity by his amusing stories, which sent a hearty laugh along the line of tired mountaineers. He had a keen sense of the ridiculous; and mankind was to him always an amusing as well as a serious study. While groaning with pain in his muscles and bones, not yet adjusted to horseback exercise, he would burst into heartiest laughter at some witty sally by our "Court Jester," Del Linderman, as he bounced along on his steed, "Dolly the Scab-Grinder," or would tremble with suppressed mirth at the recollection of Pomeroy's indignation at the behavior of his rebellious horse, "Old '76."\*

The Doctor took any good-natured joke upon himself in the best of temper. He and the writer have often since laughed heartily together over the trick by which the "1870 boys" inveigled us into taking an early morning plunge in the icy waters of Lake Tenaya, although our mirth was sadly chilled on that occasion. His anger or indignation was never aroused except by meanness or dishonorable action; and his was a nature which pre-eminently turned away wrath by a soft answer, as all of us realized on more than one occasion. He was gentleness itself, and full of the kindest consideration for others, a characteristic which always prevented any exhibition of unseemly aggressiveness or offensive personality on his part, even when engaged in the warmest argument or most earnest discussion. He never failed to realize his position as a gentleman throughout this rough-and-ready trip.

He was very facile with his pencil; and his note-books used on his mountain excursions are filled with sketches possessing artistic merit that represent mountain-peaks,

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\*For particulars concerning the ill-behavior of '76, see "Ramblings through the High Sierra."



gaping chasms, primeval forests, as well as humorous and amusing peculiarities of members of his Sierra parties. For example: "Richardson's legs." (This friend was a Shakspearean delineator, and the sketches represent his legs only; as, in the "Prelude," "they become agitated," "make a rush to the front of the stage,"—"they warm up to the subject,"—"horrificed astonishment," "scornful defiance,"—"stops there," and "bade the rest retire"—"Henry V," etc.) In this portrayal the emotions were very humorously delineated.

On his 1870 trip Doctor Joe was delighted from the very first with the novelty of his experience; for although he had enjoyed the mountains of Georgia and the Great Lakes of the Northwest before coming to the Pacific Coast, he had never before engaged in a rough-and-ready ride of this kind, so that each day brought its new experiences and pleasures.

He, with the rest of the party, was profoundly impressed at sight of the Mariposa Big Trees, particularly by the "Grizzly Giant." His meetings with the Indians, quite numerous in and around the Yosemite thirty-one years ago, were interesting to him, as affording a race study; but his awe was not called forth, nor his love of the sublime in nature fully gratified until he for the first time stood upon the brink of Glacier Point and gazed down into the awful abyss below, all unknowing that he looked upon the very spot where, thirty-one years later almost to the day, his gentle spirit was to pass from earth. Turning all about from the Illilouette, Little Yosemite, Nevada, and Vernal falls on his right hand to the indescribably grand Half Dome, Mirror Lake, Tenaya Cañon, North Dome, Washington Column, and the Royal Arches in front, and then toward Yosemite Fall, weaving about and roaring in its vast descent, and majestic El Capitan on the left; with eyes dilated, face expressing awe, astonishment, and delight,

and chest heaving with emotion, he lifted high his hands and exclaimed emphatically, "This is a grandeur incomparable; the most wonderful sight in nature!" From that moment the study of the Yosemite, its origin, development, and history, was a lifelong and absorbing interest and delight. He published much concerning this valley and its environments, and was perhaps one of the best authorities in the whole world concerning its wonders.

In the prosecution of his geological investigations, he visited many other parts of the Pacific Coast, in particular her mountain regions, for he loved the mountains; but he always returned to his first love in nature, and finally died in the grand cañon toward which he had so often and so gladly retraced his steps.

Professor LeConte from the time of his early youth had lived an outdoor life, as far as the pursuit of his studies would permit, and was, in consequence, an excellent swimmer, a gymnast, and a pedestrian and mountain-climber. Such life established and maintained that wonderful vigor and healthful constitution which bore him up in all his long-continued and laborious studies and enabled him to write so voluminously and well, and carried him on through his active and industrious seventy-eight years.

But he attributed much of his strength and mental vigor in his later years to his annual jaunts into the Sierra, and to the freshening and invigorating influence of the mountain air and scenery. No doubt there was much truth in this of value to us as well as to him.

The bare enumeration of his many trips to the mountains, made in addition to the studies, investigations, and writings in which he was always engaged, gives us an idea of the great mental and physical activity and energy of the man.

In 1870 he spent six weeks in the mountains, as related by him in the reprint by the Sierra Club.

The summer of 1871 found him investigating the geology of Oregon, and particularly that adjacent to the Columbia River.

He revisited the Yosemite Valley and Lake Tahoe in the summer of 1872, accompanied by Robert L. McKee, George Reed, Clarence Wetmore, and Julian LeConte, his nephew.

In 1873 he renewed his study of the Columbia River and its adjacent territory.

In 1874 he visited Lake Tahoe, staying at Yank's Hotel. Mrs. LeConte, their daughter Carrie, and their only son, "Little Joe," completed the party. The latter, then a mere lad, but now noted as a climber and photographer of mountains, and as best acquainted among our "academics" with the Sierra from Shasta to Whitney, made his first ascent of a high mountain. He accompanied his father on the latter's trip to the summit of Mt. Tallac, and was greatly and permanently impressed by this first experience and the panorama displayed from that peak. Doctor Joe revisited the Yosemite again in 1875, but unfortunately was seriously injured by his runaway saddle-horse, and was compelled to abandon his tour through the Yosemite to the King's River country.

In 1878 he formed one of a Yosemite party which traveled in a large covered wagon from Stockton, and, following the Big Oak Flat road, camped in the Yosemite. On their return they visited the Calaveras Big Trees.

In 1879 Professor Joe visited Portland, Oregon, the Columbia River country, the Puget Sound region, and the Frazer River district.

In 1882 Dr. LeConte organized a coaching trip to the Yosemite, and set out direct from Berkeley. In his party were his cousin, the late Dr. John L. LeConte, the celebrated entomologist of Philadelphia, and his son John. Their route was via the Mariposa Grove to the Yosemite, and a return by way of Big Oak Flat.

In 1883 the LeConte family, together with the Nesbit family, camped near Arrowhead Springs, in the Sierra back of San Bernardino.

Professor Joe, accompanied Captain Dutton, of the U. S. Geological Survey, in 1885, to Mt. Shasta, completed the circuit of that mountain, exploring its base thoroughly, and then proceeded to Klamath Lake, Oregon, and to Crater Lake.

In 1886 he spent the summer upon the crest of the Sierra, at the Summit Hotel.

In 1887 the Doctor and his son camped in Modoc County with D. W. Janes. Afterward they went to Reno, Nevada, thence 260 miles north, to Surprise Valley, passing Pyramid Lake and the "Sink of the Truckee," and camped at the head-waters of the Pit River.

In 1889 he rode from Berkeley to the Yosemite, accompanied by his son and a few Berkeley friends. On this trip the Doctor made his first visit to Hetch-Hetchy Valley, where he camped during a week's time. The party then moved to Tuolumne Meadows and ascended Mts. Dana and Lyell.

In 1893, after an interval of four years, he felt that he could not longer remain away from the "grand valley," and proceeded there alone, meeting his son and camping for the summer.

In 1894 he passed the summer in the Yosemite, staying at the Sentinel Hotel.

The year 1895 found him at McKinney's, Lake Tahoe, where he passed the summer with his family.

In 1897 he once more spent the summer at the Sentinel Hotel, in the "great valley."

In 1900 he rode a horse from Millwood to the summit of Kearsarge Pass, the crest of the Sierra in the wildly grand King's River country, and this, too, when he was seventy-seven years of age. In his party was his son "Joe."

In 1901, thirty-one years subsequent to his first visit,

he returned to the Yosemite Valley for the last time. He was extremely desirous to show the wonders of that grand region to his daughter, Mrs. Davis, who, long a resident of South Carolina, had never enjoyed the scenery of the valley. Although warned by his devoted wife as to his advanced age and loss of physical strength, and against the fatigue and anxiety attendant upon his proposed journey, his paternal affection, combined with his love of science and of the sublime, overcame his hesitation and gave him assured confidence in his own powers.

The writer found him at the railway station in Oakland, as light-hearted and expectant as when we had set out together from the same town, for the same destination, thirty-one years earlier.

"Well, Doctor, we had a delightful time thirty-one years ago. Let us hope for as good a one now."

"Yes," replied he, "I am as eager and enthusiastic now as I was then."

He was happy at the thought of revisiting (for the eleventh time) the great Yosemite, and of showing to his dear ones the unrivaled scenery of that mountain fastness.

Standing upon the veranda of the hotel at Wawona he said to me: "I have retraced in memory every day's march of our excursion in 1870. Can you point out our camping-ground here at Wawona?"

I looked around me and confessed that I could not; the place was so greatly changed and built upon.

With a pleasant smile and a merry chuckle of triumphant recollection, he pointed along the front line of the veranda to the open field near the stream, and said: "Do you see those three trees standing together? Well, there were four of them thirty-one years ago, and you and I spread our blankets beneath their branches."

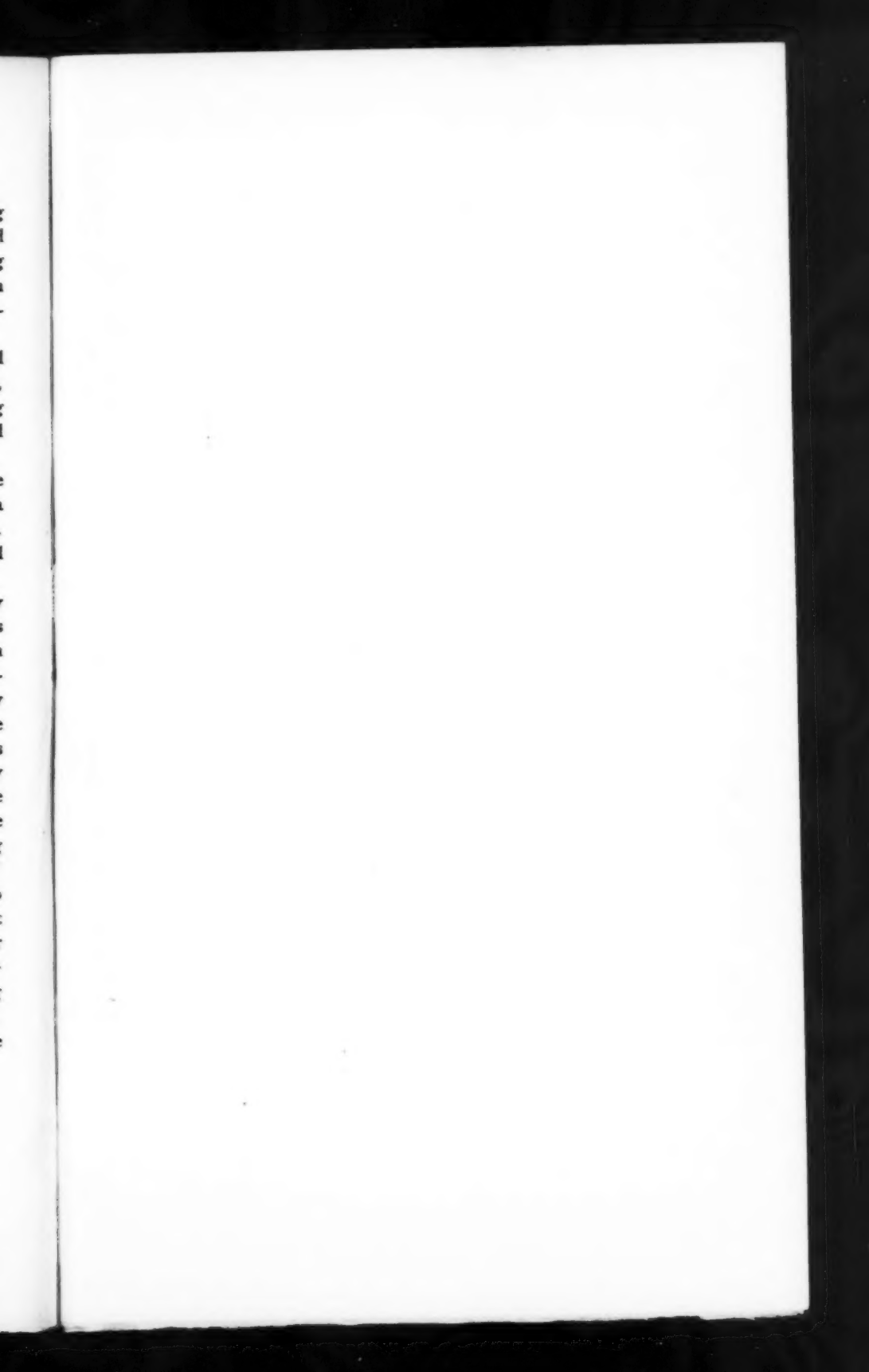
"Yes, I recall it all now," I replied. And I marveled at his wonderful memory.

"And don't you remember," said he, "how you hung your gold watch on a tree above your head that night, and set out early the next morning for the Yosemite, forgetting it? And how Jimmy Perkins rode all the way back from the valley and brought you the watch safe and sound, notwithstanding your belief that the Indians had found it?"

"Yes," I replied, "I do remember it now, though I had forgotten it. And wonderful to relate Doctor," I added, "the watch was so afraid of the Indians that it is running still." He laughed as merrily over this small joke as would a young lad.

On that day he revisited the Mariposa Grove, and drove into the valley the next (July 3d), arriving at the Sierra Club's rendezvous, Camp Curry, in a fatigued condition. He realized that the elasticity of his younger days had departed, but he was as joyous and enthusiastic as ever.

He spent the next two days in driving around the valley with his daughter and their friends, in walking to objects of interest near at hand, or, during intervals of rest in camp, in chatting with his numerous friends and the strangers who insisted upon meeting him. He was geniality and hospitality personified—a Southern gentleman of the old school; and undoubtedly his physical strength was severely overtaxed during those two days. The history of his earlier trips, his hypothesis of the formation of the valley, and geological questions innumerable were all gone over patiently for the edification of his ever-gathering listeners; but nature gave out at last. On the evening of July 5th, the sad words were whispered around the camp that "dear Doctor Joe is very ill." He was in great physical pain, caused by angina pectoris, but his daughter and their intimate friends did everything possible throughout the night to alleviate his sufferings. In the morning he seemed to be resting comfortably; so much so, that his physician left his bedside to procure additional medicine





PROF. LE CONTE AND PARTY AT THE VERNAL CASCADES, YOSEMITE VALLEY.  
From the last photograph of Prof. Le Conte, taken July 5, 1901, by Mrs. Frank Soule.

### El Capitan.

At last to him belongs the dignity supreme:  
Le Conte — Joseph Le Conte — is dead.

O mighty mountains! was it your love, your  
jealousy,

That took him from us when he sojourned so  
confiding mid your fastnesses  
Where he had wandered oft before so safe?

Kneel! Lay on him azaleas, mountain lilac,  
And make his monument El Capitan.

PALO ALTO, July 7, 1901.

JOSEPH HUTCHINSON.



from the hotel. At 10 A. M. Professor LeConte turned on his left side. At once his watchful daughter noticed a great change come over his face and said, "Do not lie upon your left side, father; you know it is not good for you." He smiled, and uttered his last words in this life, "It does not matter, daughter." In five minutes' time the revered one was dead.

His sudden and unexpected death was an unspeakable shock to all in the valley. Only twenty-four hours previously he had visited with his party the picturesque Vernal Cascades, above the Happy Isles, and while there had good-humoredly consented to be photographed, affording the last picture of him ever taken.

The sad news spread throughout the valley like the report of a mournful minute-gun. A solemn sky seemed to lower upon the peaks and cliffs, and a heavy atmosphere of loss was all-pervading. Scores of his friends quickly gathered to mourn with and to comfort his relatives and intimates. University students and graduates, who venerated Doctor Joe, prepared his casket, bound it upon the coach, covered it with the laurels and pines he had loved so well, and with uncovered heads and mournful hearts saw the earthly remains of their old master set out on its last return from the valley, escorted by the devoted daughter and a faithful friend; watched it until it disappeared in the darkness upon the long mountain road, lighted only by the stars. And so passed away the soul and the body of that great and good man, Joseph Le Conte.

CAMP MUIR IN THE TUOLUMNE MEADOWS,  
WHERE THE SIERRA CLUB WENT A-CAMPING.

(A WOMAN'S VIEW OF THE OUTING.)

BY ELLA M. SEXTON.

"Come, all you High Si-eerys!" was the slogan that called us to the camp-fire—a slogan first heard in Yosemite Valley from mighty lungs that sent this cheerful cry echoing from South Dome to Glacier Point, three thousand feet above us.

"Come, all you High Si-eerys!"—and a circle of eager, expectant faces gathered under the tall pines and round a splendid cone of leaping flames. Myriads of sparks shot up to the dark sky and brilliant stars, while grave professors, giddy co-eds, the poet, the historian, and sundry medical, clerical, and legal lights blushed alike in the camp-fire's rosy glow. For here was the Sierra Club of mountain-lovers, equipped and more than ready for this its initial expedition to those high meadows where the Tuolumne River, new-born of Mt. Lyell's glacier, lingers among the wild flowers before taking its long series of playful slides and swift rushes to the Grand Cañon miles below.

None of these "High Si-eerys" knew when the party was to start, for alarming rumors of great snow-drifts, of broken bridges and washed-out roads delaying the freight-teams had reached the camp. The real exodus, however, came three days later, and then what a girding on of knapsacks and tin cups, what a marshaling of alpenstocks there

was, since the way lay upward along the steep Yosemite Falls trail to the rim of the valley.

Under great oaks and by dewy, fragrant hay-fields, with the valley dust rising as the sun dried up the dew, we "hiked along," in mountain parlance, with the cool spray of the lower fall greeting us, and soon the zigzag, rocky path led upward. Our beasts of burden took it patiently, with only an occasional deep sigh or groan at the infrequent breathing-places. The mighty gorge unfolded beneath us in an ever-changing panorama. An hour's climb brought the procession to the cañon between the two great falls, and with the thunder of Upper Yosemite throbbing in the warm golden air, we rode through this grassy vale sweet with laurel and wet with misty spray.

Up again, while the roar of the torrent in its sixteen-hundred-foot plunge drowned our feeble shouts. Scarcely daring to look down over the slippery rocks or up to the sublime wall of overhanging granite, we clung in desperation to the saddle and hoped to behold the top. The distressed mules panted and heaved, but never failed to set each little hoof securely; the last turn came, and there was a long sigh of relief. We looked silently down three thousand feet and more to the floor of Yosemite's wonderful chasm, and then pressed forward over bare heights where the glacial markings were plain, crossing the foaming Yosemite Creek hurrying to its drop at the falls, and over endless great rolling hills. Here was the "sugar-pine belt," the trees six or eight feet through and with cones a foot long hanging from their light-green crowns of foliage. The forest vistas through these tall, straight trunks were grand, affording a fine example of the beauty of an untouched Sierra woodland. Then, as the altitude increased, both black and silver firs began to grow plentiful, and under them the strange snow-plant, an intense scarlet, fleshy, and succulent spike set with bell-shaped flowers like

a very tall red hyacinth,—supposed to be a parasite on the roots of the black fir, and only coming when snow has gone from the spot.

We reached the advance-guard of walkers at Porcupine Flat, and there, under magnificent firs and cedars, was our first camping-spot. The supper-call was the melodious whanging of a tin pan, and in line, like soldiers, we held out the individual and ubiquitous tin cup for the first course of soup and hardtack. A log or handy stone was the dining-chair, and no true mountaineer ever rinsed his cup for the following black coffee or nut-brown tea. A tin plate heaped with beans, potatoes, and a remarkable corned-beef stew was the next course, and this progressive dining permitted conversation with a second partner and a different seat for this part of the feast. Our mountain appetites disposed of everything, and ladies used to nibbling bonbons, chicken-wings, and sweetbreads ate what was in sight, polished up their tin plates, and called for more.

So the chilly dusk fell upon us, and the first truly Sierra Club "pow-wow" was held round its own glorious camp-fire. Almost too tired to enthuse much, we scorched our faces while the snow-drifts sent cold blasts against our backs, had a little singing, an announcement that Sunday was to be spent at Porcupine Flat, and then each leg-weary or mule-jolted pilgrim hunted repose under the stars.

Most amusing were the elaborate preparations for the slumber all sought and few found. One lady near me donned two sleeping-robcs, one pink and one black, a pair of yellow slippers, tied a blue bandanna over her head, and then crawled into a sleeping-bag with much pinning of giant safety-pins and tying of countless strings. In five minutes she suddenly sat up in her chrysalis of blankets (with great damage to pins, strings, and feelings) to say "Shoo!" to a wandering horse that fancied a tender bunch of grass near my lady's head.

The bell-mare roamed up and down with maddening persistence, too, and stones, sticks, and pine-cones made themselves prominent in the fir beds. On the whole the frosty morning was welcomed, though dressing and a dip into the melted snow of the brook resulted in much shivering.

We saw at this camp, in sunny stretches where the snow had melted earliest, the so-called alpine meadows of the brightest, greenest grass crowded full of tall spikes of pink shooting-stars, or dodecatheons. Blue larkspur, a smaller sweet-scented white one, and very tiny yellow, white, and blue violets also dotted the grass. Scarlet and yellow brodiaes, orange tiger-lilies, and in the marshy places pink mimulus and the golden wild musk-plant were plentiful. Now, too, carpets of very tiny flowers appeared in great profusion, each of the millions of small blossoms being a perfect flower no larger than a pin's head. The flora of high altitudes is a perpetual delight and, as we were to find, a calendar of blossoms that varied from spring to late summer, flowering according to elevation and not time of year.

Some six miles' tramping through fir-woods and tamaracks was the next day's trip. While plodding along over granite hillsides and ridges strewn with bowlders literally as large as a house, we caught a glimpse of blue Lake Tenaya in the distance, and on descending to the meadows skirting that body of water a race of savage and hungry mosquitoes presented their ready bills. Having been forewarned of these pests, our "High Si-eerys" went into the temporary retirement of head-nets. These were a sort of maddening bird-cage of white bobinet and wire rings, very hot and blinding, but mosquito-proof at least.

Lake Tenaya was a pretty sheet of clear, shallow water, lying under the shadow of a great mass of snow-flecked granite, and in the forest beside it was our halting-place for the night. Not till cold twilight did the belated

baggage get in, and then there was a great scurrying to unpack blankets and make hasty sleeping-quarters in any old place. Camp-fires blazed near every group of sleepers, and no wandering horses, nor even the alleged cry of a mountain lion, could rouse the tired ones.

The following day tried our souls indeed, and incidentally blistered not a few tender feet; but finally we struck the first of the Tuolumne Meadows and could hope for a goal at last. Between us and the invisible river lay stretches of grass, marsh, and mosquitoes, the most distracting variety of this interesting family we had yet encountered. A magnificent panorama of Sierra mountains walled in the horizon—grand Cathedral Peak with its long roof-shaped summit, crowned at one extremity with cathedral spires; Unicorn, whose sharp horn to the right of the snowy bulk had earned its fantastic name; Echo Peak and others to the south, and the Dana group we were drawing nearer to in the eastern end of the valley. The way was musical with brooks and swirling, foaming streams, each having a perilous crossing of slippery logs or widely separated stepping-stones where most invitingly the cold waters rippled over weary feet. So the last of the ten-mile tramp was traversed and permanent camp was reached in tired thankfulness.

Next day the creamy-white tents were pitched picturesquely on rocky knolls or under the pines and tamaracks on the southern bank of the Tuolumne, here a rushing river some fifty feet wide. Army cots were unfolded for the sybarites who found Mother Earth's bosom rather a hard one, the two excellent Chinese cooks set to work at a range warranted to bake for a mess of a hundred, and the "High Si-cerys" were in regular possession of their dreamed-of mountain-camp.

Then came delightful lazy days, when brilliant sunshine, an enchanting view of eternal snows on Mt. Dana or Mt.

Gibbs, and the music of the cascades near by made lounging round camp perfection enough. Or there were trifling three-mile tramps to an ice-cold soda spring bubbling up in its iron-reddened basin across the river and effervescing with lemon-juice and sugar into a draught fit for the fabled gods.

There were solemn hours, too, when the mountaineers looked disdainfully at us feeble "tenderfeet" as we set off with trusty alpenstocks, a light lunch, and much courage to conquer the jagged peaks, loose talus, and snow-fields of Mt. Dana. That proved an exciting day for even the "stay-in-camps," since the party had to be ferried over the Tuolumne on a primitive log-raft which dipped to the swift current and elicited shrieks and wet feet from the feminine passengers and laughter from the party on shore. Then the climbers were so delayed by ten long miles to the foot of the mountain, the hard ascent and a weary ten miles back to camp, that relief-parties had to go out to kindle fires at stream-crossings, and it was nine o'clock before the last straggler was ferried over on the shaky raft.

For several days thunder-storms gathered in the afternoons, and showers capriciously drenched the camp and avoided other localities a mile or so away, while the sunsets on piled-up clouds and snowy peaks were the admiration and despair of our artists and poets.

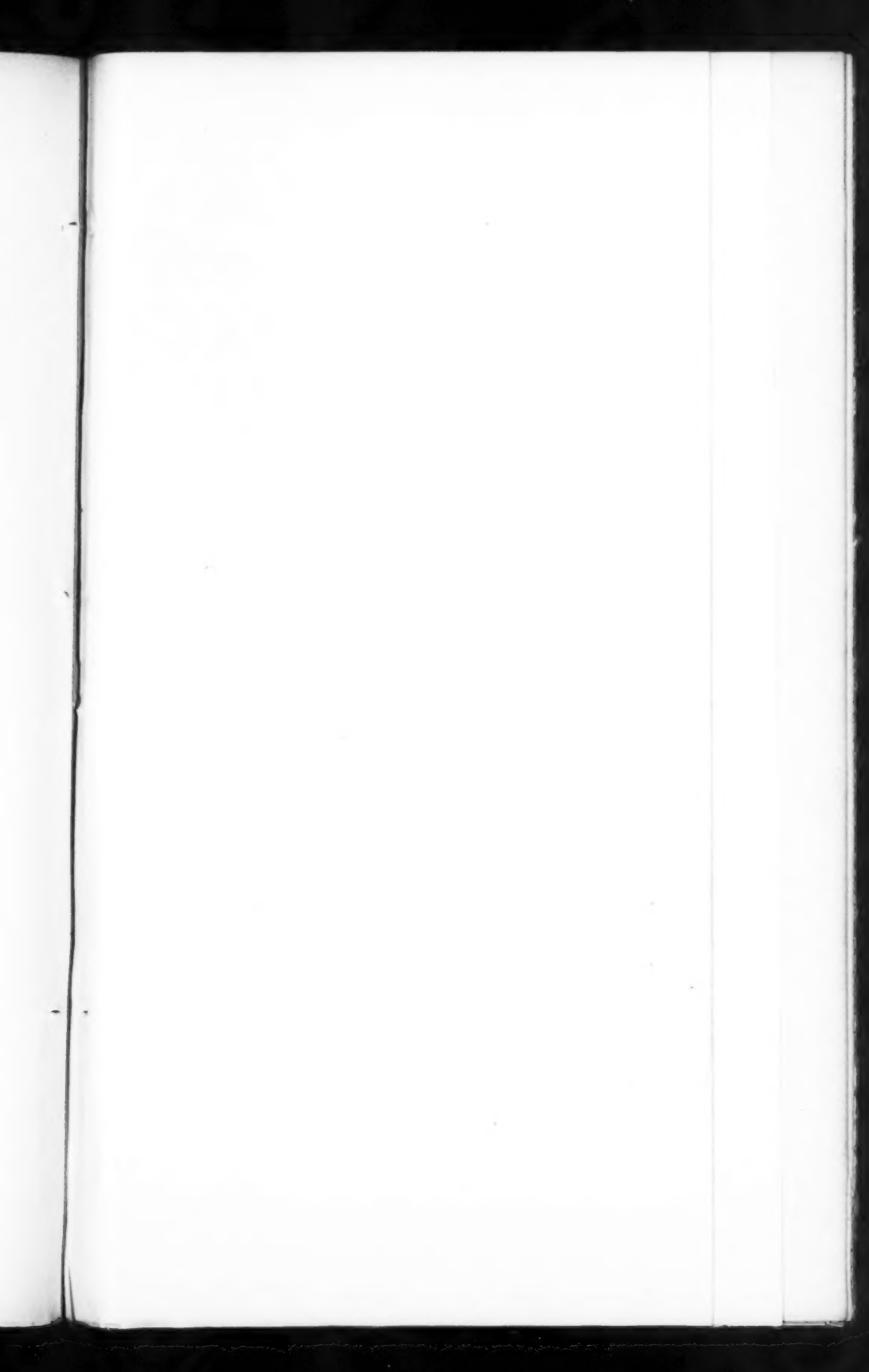
Down the meadows and rock-ribbed banks of this new-born, tourist Tuolumne, as John Muir calls the river, to the great fall at the opening of the Grand Cañon proved a day to be remembered. Muir, the prince of mountain-lovers, was guide and apostle, and his gentle, kindly face, genial blue eyes, and quaint, quiet observations on present and past Sierra conditions impressed us unforgettably with the "sermons in stones, books in the running brooks" he knows so well.

All too swiftly flew the days, each ended by a gather-

ing round a glorious blazing camp-fire, while Professor Dudley, of Stanford, talked on the Sierra forests, C. Hart Merriam, the eminent biologist, explained his system of classifying the animals of these high altitudes, John Muir, as president of the "High Si-eerys," modestly introduced others, and many lesser lights told incidents of the day's happenings, or songs and stories. Each evening some familiar faces were missed as the second week wore on. Pilgrims retraced their way, either by the Cathedral Peak trail, Clouds' Rest, and Nevada Falls to the Yosemite, — twenty-seven miles of tramping in one day, which many ladies accomplished, — or the Lake Tenaya and Porcupine route, by stage and horseback-riding.

So the inevitable day came when we looked our last on snowy mountains and rushing river, and with precious cameras loaded with snap-shots or time-exposures, and more precious memories Time himself cannot obliterate, went out cityward assured of the Sierra Club's successful expedition.





Mt. Dana ↓

Mt. Gibbs ↓



# GENERAL VIEW OF THE TUOLUMNE MEADOWS.

From a photograph by Ford A. Carpenter of the U. S. Weather Bureau.

Mt. Gibbs ↓

Mammoth Mountain ↓



# RIVER BELOW CAMP MUIR.

From a photograph by Ford A. Carpenter of the U. S. Weather Bureau.

Mt. Gibbs ↓



E MEADOWS.  
U. S. Weather Bureau.



S. Weather Bureau.



GENERAL VIEW OF THE TUOLUMNE MEADOWS.  
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Mt. Gibbs ↓ Mammoth Mountain ↓



RIVER BELOW CAMP MUIR.  
From a photograph by Ford A. Carpenter of the U. S. Weather Bureau.

## THE SIERRA CLUB OUTING TO TUOLUMNE MEADOWS.

(A MAN'S VIEW OF THE OUTING.)

BY E. T. PARSONS.

In the High Sierra, back of the Yosemite Valley, surrounded by snow-peaks and guarded by sentinel-like, glacially polished granite domes, are beautiful mountain meadows, once the beds of immense glacial fields that originated on the lofty summits of that region. In extent and beauty the Tuolumne Meadows rival any similar mountain region, and here the Sierra Club this year enjoyed its first annual outing. During the latter part of June and the first week of July the mountaineers assembled in the Yosemite Valley, there to revisit the scenes familiar to most of them and train for the more serious enjoyment of the higher altitudes.

It was in the Yosemite Valley, during this preliminary gathering, that the Nestor of California mountaineers, Joseph Le Conte, surrounded by his loving disciples and friends, lived the last happy hours of a delightful life. Those who were with him on his last drive about the floor of the valley will never forget their visit to the foot of the lower Yosemite Fall, where, standing on a rock in the spray from the falling waters, he raised his arms aloft and shouted in the exuberance of his joy and delight at the magnificent spectacle before him.

After his passing, the outing continued as planned, for there could be no doubt what his wishes would have been.

To those who loved him and revered his memory it was as if his kindly presence had been with them on the trip, and the voice of Nature seemed to speak a more forceful message of the wonders and magnificence of creation which had been the study of his life.

The wagon-train of commissary and supplies had been started in from Merced over the Tioga Road, and we were to join it at Porcupine Flat, going out of the Yosemite Valley over the Yosemite Falls trail on July 11th, but the wagon-train having met with delays on the road, due to heavy snows and broken bridges, word was not given to the expectant band of mountaineers until the evening of Friday, the 12th. The start took place on Saturday, the 13th, at 5 A. M. Some rode horseback out of the valley, but nearly all of the party walked out over the trail. Few of us will ever forget this delightful tramp, starting as we did in the cool of the early morning, avoiding the heat of the day with its discomforts and enjoying the views of the valley as it spread out before us. The Yosemite Fall was at its best, and the early morning breeze from the east spread it lacelike over the face of the cliff, as if to hide and soften any sternness of outline.

The entire party of ninety-six rendezvoused at Porcupine Flat that night, remaining there over Sunday. Many of the party climbed to the summit of Mt. Hoffman, 10,921 feet, during the day. It was the first serious climb of the trip, and enthusiastic were the reports of the climbers on the magnificence of the views from its summit. To most of them it was the first mountain-climb of their lives, and they were delighted at their ability to conquer a real mountain and encouraged to attempt the higher peaks to come later in the trip. From a point about half a mile south from our encampment we enjoyed a magnificent view of Half Dome and Clouds' Rest, looking across Tenaya Valley and cañon.

From Porcupine Flat to the permanent camping-place the trip was made interesting by the obstacles to be surmounted, and it was a sight to see dignified college professors, wily limbs of the law, deft doctors, and reverend clergymen join gleefully in rolling rocks, lifting logs, and shoveling snow to make way for the commissary, while the road-makers sent out by the owners of the Tioga Road used dynamite where blasting was necessary and moved more serious obstructions with their teams.

Monday night we camped at Lake Tenaya, arriving there early in the afternoon. Swimming and fishing parties enjoyed every moment at the lake. A more beautiful scene than the camp that night could scarcely be imagined — the moonlit lake in front, and beyond it the grim outlines of the granite mountain, Tenaya Peak, with the large camp-fire on the lake shore, and, back up the slope midst the trees and great boulders, the small camp-fires, lighting to couches, not downy but restful, the tired but happy travelers.

Tuesday evening we reached and established our permanent camp in the Tuolumne Meadows, naming it "Camp Muir," in honor of our president. Here, to the delight of our cooks, we placed our Buzzacott range and set up our Sibley tents and established headquarters for the various excursions that filled the time of our stay.

It was not long before our engineer corps constructed a raft which swung from a rope in the bend of the river; but the instability of the raft caused us to seek a more permanent crossing, and trees were felled making a foot-bridge for easier access to the delightful trips across the river.

On Thursday, the 18th, forty-nine of the party tramped to Mt. Dana, ten miles away, following the Tioga Road through emerald meadows, crossing sparkling, tossing brooks, passing under arching evergreens with glorious vistas of snowy ranges to the southward, until the base of the

mountain was reached, when all successfully climbed to the summit (13,050 feet) and registered in the records there. We returned to camp that night a weary but delighted crowd, having enjoyed the glorious views of the High Sierra and of the Mono Lake region to the eastward. The climb of Dana was a tedious one. There was but little snow on its crest, and the way over the large loose, broken rocks was wearisome, but the thrill of conquest and the fascinating features of mountain scenery amply repaid the trampers. Nearly all of the women in this party were Berkeley or Stanford girls, and their vigor and endurance were a revelation to all of us, demonstrating as they did that health and vigor go with college life. At no time during the outing did the college women give out or find fault, nor did they delay or prove a drag on the progress of the excursion. One confirmed mountaineer said that it was the first time he had ever been camping with women, and that he had started in with serious misgivings, but after this experience he would never go to the mountains again without the added pleasure of the companionship of women.

The most noteworthy event of the outing was the climb of Mt. Lyell (13,120 feet). Twenty of the party went on this expedition, all of whom had proved their mountaineering qualities by the work they had already done. The start was made at noon, July 20th. The pack-horses carried blankets and provisions to Camp Lyell, ten miles away, at the head of the upper meadow near the base of Mt. Lyell.

The party was roused at 3 the next morning and breakfasted, ready for the start at 4:30. The first part of the climb was made slowly over the broken rocks of the basin at the head of the valley and up on to the flank of the mountain. Snow was soon encountered and some steep snow-climbs enjoyed. Good progress was made up on to the Lyell Glacier and along the snow-fields that extended several miles up to the broken rocky pinnacle at the sum-



mit. The surface of this snow-field had been honeycombed by the sun, making travel tedious, and a slow pace was set by our leader, Mr. Colby. However, by 10:30 we were all at the base of the rock summit. Here we found real danger awaiting us. The broken rocks of the peak, loosely piled on top of one another and almost perpendicular for nearly 300 feet, seemed ready to topple and fall on us every minute. However, without accident, all registered on the summit by 11:30. Never was a luncheon eaten with more magnificent surroundings. Far to the south extended the snow-capped Sierra, with magnificent Mt. Ritter in the foreground, while near at hand was Mt. Kellogg, and to the westward Mt. McClure. Some interesting photographs were made of these snow-peaks, particularly Mt. Ritter. As gathering clouds gave warning of a coming storm, an early start for the lower regions was made. The very steep snow-slope below the crest was tempting to many, and some undignified slides were enjoyed by both the sliders and the beholders. Before we reached Camp Lyell it began to rain, and midst shower and sunshine we made our way to Camp Muir, all getting in by 6 P. M. We who had climbed Mt. Dana voted Lyell less irksome to climb and by far the most enjoyable ascent of the outing.

There were trips for the less ambitious — to the crest of Lambert's Dome, which loomed up 1,200 feet opposite our camp; to Cathedral Lake; to Tioga Lake, where quantities of fine trout were caught; and to Bloody Cañon.

At the large camp-fires every evening the grave and the gay prevailed by turns. Professor Dudley, of Stanford, gave some delightful talks on the forestry of the region. Dr. C. Hart Merriam, of the United States Biological Survey, who was in that region with his family and party for the summer, joined our encampment while we were there. He told us of the bird and animal life of the Sierra. John Muir, our honored and popular president, turned the pages

of Nature's book for us, and not only beside the camp-fire, but during many rambles about the region, explained the processes of creation in the carving out of the valleys, the polishing of the domes, and the slow replacing of icy wastes with flowery meadows and beautiful lakes, rivers, cascades, and falls.

Theodore Hittell, noted for his scholarly historical researches, read a fascinating account of the incidents leading up to the discovery of the Yosemite Valley by white men and the circumstances under which it was first visited, seen, and named by them.

Mirth and frolic, too, had their place at the camp-fires,—song, story, recitation, and music, with an occasional poem inspired by the surroundings.

On the 22d and 25th parties left for home, and on Monday morning, July 29th, Camp Muir was finally dismantled. We rose at 4 o'clock, breakfasted at 4:30, and at 5 o'clock were on our way over the Sunrise Trail to Yosemite Valley. This tramp of twenty-four miles was perhaps the most enjoyable of the outing. Varied in grandeur and beauty was the panorama of alpine scenery, valleys and mountains, open flowery meadows and timber, rivers and waterfalls, near-by castellated peaks and far-away snowy crests,—an unceasing succession of delights to the lovers of nature who were enjoying the last day of this first club outing. By 6 P.M. the entire party had arrived at Camp Curry to leave for their homes the next day. All were enthusiastic over the mountains and were already planning for next year's excursion.

## IN TUOLUMNE AND CATHEDRAL CAÑONS.

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BY ALEXANDER G. ELLIS.

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Of the many short trips made from the main camp of the Sierra Club at Tuolumne Meadows this summer, one of the most delightful was that to the White Cascades, affording a glimpse down the Grand Cañon of the Tuolumne. On the morning of July 23d almost all who were in camp at the time started under the leadership of Mr. Muir. Lunch for the party was packed on mules. Professor H. R. Fairclough and the writer, who had from the first planned to go on farther down the cañon, took in addition provisions for themselves for two days. The limit of possible progress for pack-animals was reached about the middle of the forenoon, when it was thought best to stop for lunch. It was still a long way to the top of the Cascades; but the constant and startling change of scene, and the luring of the far-away glimpses, made both space and time seem short. About noon we stood on a ridge opposite the mouth of Conness Creek, looking across through the broken wall of the cañon far off to where Mt. Conness stood up grimly amidst scowling storm-clouds. The roar of the cascade was in our ears. Whilst we stood, trying to master a multitude of feelings and impressions, the storm overtook us. Many sought the shelter of some large trees in the hollow below. A few, under the spell of the magnificent surroundings, remained on the rocks, under the two or three fantastic junipers growing there, while a still more excited few clambered to the top of the cañon

wall above, for the sake of the extended glimpse down into the forbidden region—the real Grand Cañon. This was the end of the trip for the main party.

In spite of the storm (possibly in part because of the fascination of it), Mr. Herbert M. Evans now found the temptation to go on down the cañon irresistible, although he had come unprepared and without provisions. Waving good-by to our friends below and to the shouting cliff-climbers above, we three pushed on alone. It was not far from half-past one o'clock. Descending the declivity which caused the Cascades we came to a little flat with flower-bedecked glades set off by a growth of large red silver firs. But it proved to be swampy; its flowers were heavy with raindrops, and its tangle of brush discharged volleys of liquid missiles upon the invaders. So we took to the cliff. Here, too, we were inhospitably received, and got our first idea of what Mr. Muir had meant by saying that we should have to make our way over piles of granite blocks some of them "as big as the Mills Building." Many were poised in seemingly very unstable equilibrium, and it was wearing on the nerves to walk over or crawl under such. Before the end of the journey, however, we thanked our stars whenever we came to so easy a place as a talus-pile or slide. Some distance beyond the flat was one of a series of the most remarkable ridges of solid polished granite running crosswise of the cañon, like so many stupendous dams seeking to bar the further progress of the river. In fact, they do seem to startle and frighten it out of almost every resemblance to an ordinary river. As Mr. Muir put it, "the river itself does n't know where to go." It is not permitted to hesitate, however. Dashed hither and thither, hurled upon jagged rocks, turned, twisted, churned incessantly, it seems to become frenzied. Not even at Niagara does water look so wild and furious, so beside itself and unnatural. A confused rush of foam-

ing white and flashing green it is from the Cascades to the mouth of Cathedral Creek. We ourselves found it no easy task to cross these ridges. They are glacier-polished, and on the lower side precipitous, as if the great ice-plow had at these places been first pushed upward and then, finding a cleavage-joint, had broken off and shoved out of the way great slabs of the rock as long as the cañon is wide, and extending several hundred feet downward. Cracks and crevices alone save these places from being impassable. Once we came near having a serious accident, owing to inability to find a secure foothold in scrambling on all fours down a glassy slope.

Between these ridges was a tangle of brush, some of it thorny, and nearly all underlaid by a confusion of large rocks. Here progress was desperately slow and toilsome, though not dangerous, except for the probability of stepping on a rattlesnake. An occasional buzz kept us alive to this risk, however. We tried the water's edge, but found no clear margin. The recent rains had helped to melt the snow, and the river was full to the brim. A few weeks later we should in all probability have found, in the clear space between high and low water, an easy escape from many a struggle.

As the sun was passing beyond the cañon's ramparts we came to the top of the California Falls, and stood awe-struck at the turmoil below. On a terrace near the foot of the falls we noticed some large and finely shaped red silver firs, truly worthy of their botanical name "the magnificent." Again, the next morning, we looked up and back at them and tried to estimate their height, but there was nowhere to be seen anything familiar enough to serve as a standard of comparison. It took us almost an hour to reach the rocky terrace spoken of. We decided to camp right on the rock just beyond the spray. The polished granite was at least clean, and not, like everything else,

spongy with water from the afternoon's rain. A level spot, almost surrounded by great blocks of stone, protecting it from the wind, with a large clean hearthstone in front and reflecting walls behind, seemed to promise cozy comfort for the night. These were important considerations in the view of three tired and wet fellows without bedding. From a stocky juniper near by we tore long strips of its dry fibrous bark, which flossed nicely into a soft and deliciously fragrant bed. A large butt log which sputtered with pitch made the backing for a roaring fire. We soon were dry. Our hearthstone was bright. An abundant meal made us cheerful, and for some time after dark the narrow cleft in which we had nestled resounded with college-songs. Our bedroom, notwithstanding its perfect ventilation, was at first uncomfortably warm, and we had to tear our fire apart. It was glorious to breathe the cedar incense, to hear the roar of the river above and beside us, to see the starry dome above buttressed by the massive promontories of the cañon walls. We were soon asleep, however, and at least two of us, who backed up against each other, slept as cozily and as soundly as at any time we had done in our blankets.

There was, however, no difficulty in getting an early start next morning, and by seven we looked over the brink of the Le Conte Falls. (See photograph.) Words fail to express our astonishment. "Look at the steam-engine!" we exclaimed. The water, tormented and writhing incessantly since it had left the White Cascades, seemed now to be panic-stricken, and to tremble on the verge. Then, as if abandoning all its notions of propriety, and forgetful of the laws of its being, it left its bed and whirled through the air, a huge uplifted arc, or wheel. A wide sparkling fringe marked the outer margin of the whirl, and through it silvery rockets burst in all directions, contributing their gems to the lace-work of the fringe. A few moments later, with terrific

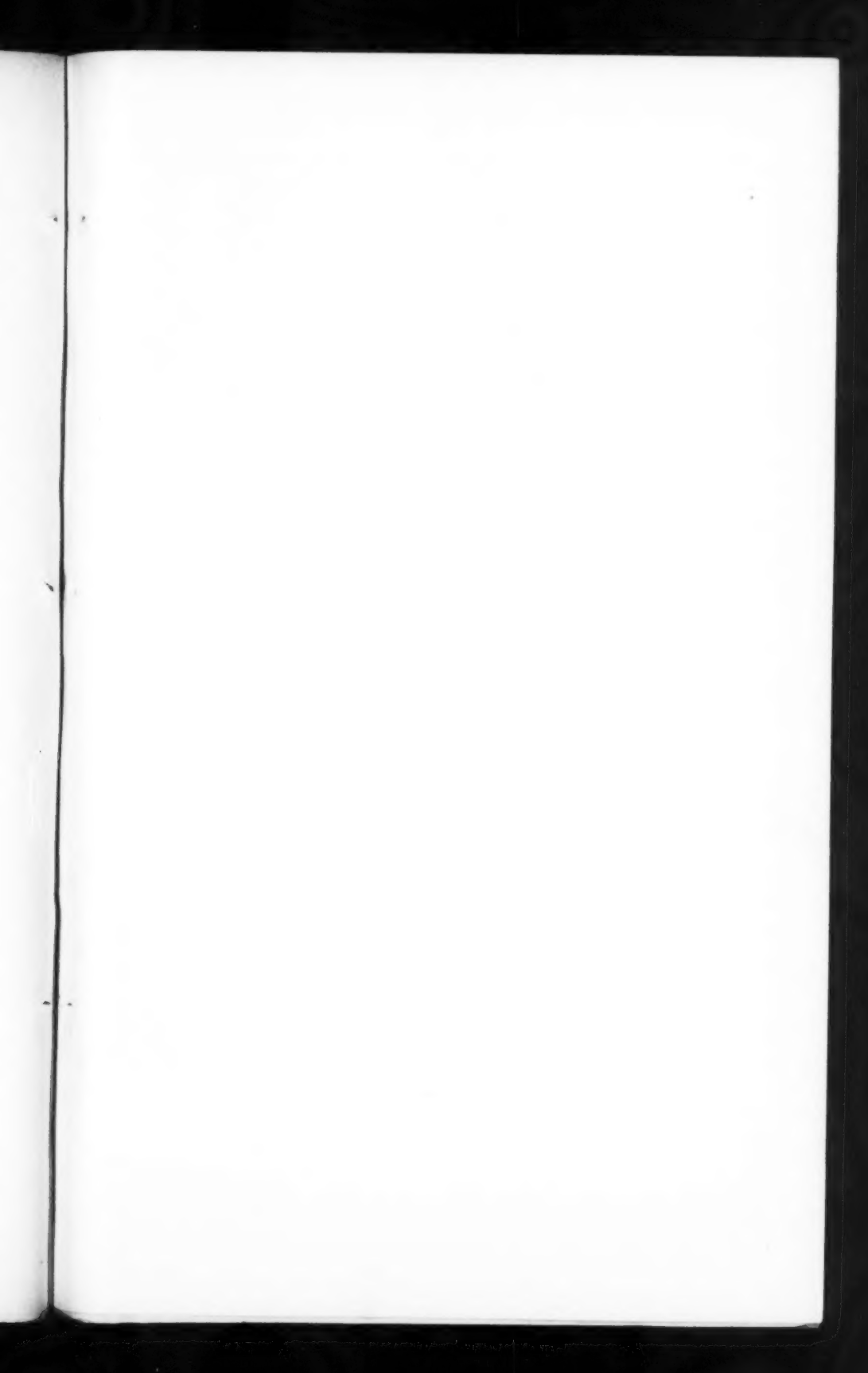
energy, it hurled itself, almost at right angles, against the plane face of a great slab of granite that stood out from the face of the declivity and extended transversely across farther than we could see through the mist. This wall was too high to be leaped, even by an insane river. That it should withstand the titanic onslaught of the water, however, seemed marvelous. The concussion sent out a cloud of steam—it was too light to be called spray—with rumbling and hissing noises. The groaning and the thundering of ponderous machinery was also to be heard, and one easily fancied himself in one of nature's great engine-rooms.

On clambering down, we saw that the whole river, full to the brink as it was, broke here as completely as the sea-wave breaks against the solid cliff, and in mad haste was escaping from the scene of disaster, in a course quite at a right angle to its former one. It rushed along the ledge impatiently for several hundred feet until, a short distance from the opposite wall of the cañon, it found an opening through which it bounded, curving sharply back again, and, after a succession of leaps and cataracts, resumed its chosen way close to the south wall of the cañon under which we were. With difficulty we worked our way to its edge where it rounded a bluff, around which we tried to follow it, but found the water too high. It was a tedious and painful scramble over the bluff and a struggle with brush and rocks until we came out at the foot of a long bare, polished granite ridge, curving up to a domelike height, and thence connecting with the divide between us and Cathedral Cañon. Finding the water's edge again impracticable, we made for a sag in the ridge, expecting to cross over. The farther side proved to be a sheer precipice, and we were obliged to make the slippery ascent to the dome. Here we had a magnificent view of the Grand Cañon, both backward and forward. We were greatly impressed with the effect of vastness and distance given by

the comparatively wide space between the precipitous sides of the cañon, and by the long transverse lines introduced by the damlike ledges already spoken of, terracing the cañon on a gigantic scale. Only a Milton or a Dante could even suggest the effect. Its grandeur is of a character quite different and distinct from that of the Yosemite. Recent happenings suggested the pleasant reflection that this cañon at least is inaccessible to the Board of Commissioners, and intolerant of "improvements," and that here Nature has carefully guarded against the intrusion even of the profaning eyes of any who do not love her for her own sake.

The same sheer precipice again confronted us from the farther edge of the dome, and reluctantly we decided to make for a narrow ledge running along the face of the cañon wall ahead, in the hope that it might lead around into Cathedral Cañon. It seemed a desperate chance, but the only alternative was to retrace our steps. At first it led us up and down very abruptly, and unpleasantly close to the edge of the precipice. Presently it widened, but as it did so became matted with storm-beaten brush, which impeded us painfully. After a while we came upon a kind of trail through it, which, though not separating the branches to any great distance above the ground, yet gave us a free footing. From marks on trees near by, we concluded it must be a bear trail, and thereafter proceeded with much ostentation, in order to give the proprietors polite notice of our approach. At last we came out upon another ice-rounded ridge similar to that we had left behind us, and soon had our anxieties as to the outcome set at rest by the sight of a good-sized stream which we knew must be Cathedral Creek. At this point it was making a steep descent down the face of a glacial scoop, in a very curious fashion. It was falling, sometimes ten or fifteen, sometimes thirty or forty feet at a drop, from one to another of a suc-







LOOKING DOWN LECONTE FALLS.  
From a photograph by Alexander G. Eells.



BASIN CASCADE.  
From a photograph by Alexander G. Eells.

cession of circular or oval basins hollowed out of the solid granite. The whole formed a singular compound fall, each component part of which poured out of and in turn into one of these basins. The point where we stood was about midway between the top and the bottom. With some difficulty we managed to get the accompanying photograph, showing, though with a false perspective, perhaps half of these basins. It is only by noting the good-sized trees on the opposite bank that one gets an adequate idea of the magnitude of the scene. A curious cascade of many fine filaments and thin ribbons of water came straggling down from the high cliff opposite; a bit of the lower part of it can also be seen in the photograph. A bold promontory towered above us on the side where we stood, but we could not get far enough back from it to photograph it with our pocket-camera. Below us the stream seemed to pitch out of the barren granite hollow, presumably over the walls of the Grand Cañon. We fancied it would be impossible to come up from that cañon by way of the creek-bed directly, at least during such high water. Dark clouds had been gathering, and as we sat down to lunch it began to rain. We were soon driven to the shelter of a shelving rock. After a heavy shower, lasting perhaps an hour, we set forth again and thought to cross a sloping ridge, a spur of the mountain above us. Much to our surprise we found here, as elsewhere in this remarkable cañon, the reverse of what had been the case in the Tuolumne, namely, the precipices were on the easterly or up-stream side, though, it is true, the ridges did not run straight across the cañon as before. We had to retrace our steps to the creek. Finding no crossing, we had no choice but to work our way along the foot of the cliff by the aid of the outgrowing brush and trees, in a manner more becoming to monkeys than to men. Every bough we touched discharged its shower-bath upon us. After a long time spent at this, with but very little

progress, desperation drove us into the creek. We plunged in heedless of the consequences and struggled across. The other side was better for a short distance,—until the cañon turned,—but the churning of the water in our shoes and the dragging of our wet garments was not pleasant, to say the least. We had to repeat this performance several times.

The remainder of the afternoon was one long struggle, and an up-hill struggle it was in every sense, against matted, tangled, wet, and slippery brush, the dead portions of which bristled at us like *chevaux-de-frise*. A dead tree-trunk along which to walk was a great relief. A talus-slide was "easy," and the boulder-strewn but otherwise clear bottom of an overflow channel was a positive luxury, even though covered with shallow water. We had long ceased to have any care about such uncertain evils as rattlesnakes.

Just at dusk, after we had struggled to the crest of a long ridge sloping far out across the cañon, we saw at its foot a most welcome open, level space, amidst some tamaracks. As we were looking for the least dangerous way down the perpendicular farther side of the ridge, two startled deer bounded gracefully out of some bushes and swam across a pool in the creek near by. We noticed that the north wall of the cañon was much broken down, and hoped it might be the crossing-place of the old Virginia Trail. At any rate, the cañon looked much more level and practicable as far as could be seen. With renewed energy we slid and swung down the precipice, and, reaching the open, prepared to "camp." There was no singing that night. The ground was damp, almost soggy. The wood we gathered was wet. The rocks we picked up in the darkness failed miserably to do any real service, either as seats or as hearthstones. For supper we had a few pieces of broken hardtack, a remnant of chocolate, and a few raisins. Our provisions, intended for two, had been almost

exhausted during the day. After long-continued efforts to dry our clothes, we sank down on the ground in various more or less uncomfortable positions and dozed. Every half-hour or so afterwards the breeze made us understand that some portion of our clothing was still wet, and we would get up, renew the fire, and try to mitigate that source of discomfort. Next morning, as soon as it was light enough to see, we ate all that we had left, to wit, a handful of malted milk tablets. It was as hard to get ourselves in motion as to start up a rusty lawn-mower. Fortunately, we found the way much more open. The talus-piles were clean, respectable blocks of granite. The brush was no longer dripping. Although it was a long time before we found any signs of a trail, there was comparatively so little difficulty that we soon warmed up to our task, almost cheerfully. We found a refreshing soda spring, and inscriptions on the trees near by. Soon afterwards we came within sight of Fairview Dome and Round Mountain. Another little spurt brought us to the Tioga Road, where we swung into a good road gait which brought us, about 11, to the camp at the Meadows. A full meal, an hour's sleep, and a plunge into the river brought us all back into the condition in which we could declare that it was a trip we wouldn't have missed for the world.

We agree, with emphasis, that the afternoon's agony in the lower part of Cathedral Cañon was by far the worst part of the entire trip, and that none of us care to repeat it. Perhaps, however, at low water a comparatively easy way along the margin of the watercourse might be picked out.

We all declared our intention to make the trip throughout the whole length of the Tuolumne Cañon at the earliest opportunity, and to make it on the south side if possible. If the precipice near the mouth of Cathedral Creek should prove an insuperable obstacle, a large tree which we saw

across the river just above it will, no doubt, afford a crossing for several years to come.

At least one woman has made the trip, though on the opposite or north side of the cañon; and for the benefit of any whom the spirit may move to make the attempt hereafter, we suggest, in closing, that a man's attire is indispensable to success. Any sort of skirt would make the struggle through the brush simply hopeless.

## THE GREAT SPRUCE FOREST AND THE HERMIT THRUSH.

BY VERNON L. KELLOGG.

The Great Spruce Forest is characterized chiefly by its very many trees and its dreadful stillness. As we reluctantly poked our heads from beneath the covering blankets and peered about through the heavy gray of a June dawning, the ghostly trees and the absolute silence struck first into mind. A June morning at ten thousand feet above old ocean's bosom is quite another thing from the breaking of day in summer's first month hereabouts.

It is cold on the mountain-side. The Great Spruce Forest lies high up on the eastern flank of a mighty mountain range, and covers a great many acres of tipped-up ground. Just how many, perhaps no one can truly say, but each acre is the type of all; completely usurped by towering straight spruce-trees bearing regular whorls of downward-projecting branches, each branch formidably armed with keenest bluish-green needles. I tried climbing one of these trees once to get at a tempting jay's nest fifty feet up, but was well-nigh transfixed on the first *chevaux-de-frise* reached. The silent spruces were as thickly crowded as they could grow, and held far aloft, stretching over their sharp tips, an intensely blue sky. When one in the Great Spruce Forest looks in front or behind, or to right or to left, he sees only the rigid gummy trunks firmly set in the moss-covered ground and among them, pushing away in all directions, the dim darkling forest aisles. If one looks up he sees high aloft, as from the bottom of a well, a small

patch of blue. A long way up is it to the blue, and rank after rank of the downward-pointing spears assure one of extreme difficulty in the getting up.

Just where in the Great Forest we shiveringly inspired the fresh atmosphere that June morning, a small group, perhaps half a dozen, of spruces had succumbed to some great wind and their fallen shafts were slowly returning to the soil the rich stores they had formerly taken from it. A tiny pool of clear, cold water with a half-invisible rivulet seeping away through the dense green mat, quickened the plant life for some little space around. Bright yellow splashes of buttercups and trembling wind-flowers reared their dainty white faces from among the cool green leaves; near a half-imbedded stone dashed with soft shades of color by the abundance of some microscopic plant form, a handful of odd-faced columbines, half-white, half-purpling, bent languidly toward us. At our feet a tenuous line of smoke drifted uncertainly upward, and the white ash covered the still live embers of our evening's camp-fire. A couple of tin plates and cups rested on a log, and on a pile of spruce limbs from which had been furnished the fuel for the camp-fire, lay a greasy "burlap" in which was confusedly confounded the food for the now wakening sleepers. A burro's pack-saddle, with ill-smelling straps and cinches, rested in close proximity to the "grub-sack," and a rod or two distant, meditatively munching a bit of decayed spruce log, stood the meek and impassive Billy himself, hero of many a ludicrous adventure, and venerable as the ancient rocks above us. Two unsophisticated-in-mountain-camping youths were we who had spent a rather disagreeable night. We had trudged toilsomely more than half the day before, begging, pounding, cursing Billy-the-Burro for a dozen miles up from the Big Thompson cascades in the mountain valley below to hunt for deer in the Great Spruce Forest. When fairly in the forest, and the narrow aisles between the rows



of spruce were growing short because of the spreading darkness, a mountain lion had slipped across the trail not more than half a hundred yards in front of us, and had carelessly let slip from its mouth one of those horrible cries for which it is unpleasantly but deservedly notorious. We had not come up in search of stray mountain lions, and the wakeful hours of the long night were haunted and made distressful by more or less well-defined suspicions of the brute's presence about camp. A stumble of Billy's over a down trunk during the night liked to have made gibbering imbeciles of us both. A mountain lion is a most unhandy victim for the tyro sportsman, he (the lion) having notions of his own about self-defense, and possessing a hideous complement of weapons with which to put these notions into practical execution. The mountain lion is reputed by naturalists, too, to be little put out by darkness, being a regular owl when it comes to keeping late hours. We had not bargained when we set out to be deer-hunters for hand-to-hand conflicts in the dark with cougars, and the final coming of the long-delayed dawn lifted no slight load from our bold hunters' hearts.

With all the charm of the camp surroundings, the almost intolerable silence tended to create a feeling akin to depression, and our weak attempts at jest over the night's unrest were so foreign to the spirit of the morning that they died on our lips. There was needed the voice of the Great Forest, the utterings of the wood-spirits. And as we lay with straining ears and tense nerves, of a sudden the voice came. High over head and down the trail half a dozen rods burst forth a single lyric measure, the notes rolling, trilling, gurgling, and clear and strong as befits the voice of a great forest's spirit. The short carol was repeated, and again. The last liquid *tur-kwill-ah-illah-ee* was barely dying away when from far away in the direction of the silent green lake which one may seek for a day and

never find, came faintly the answering voice, trilling back the same joyous strain, and more faintly still, floating up the mountain from far below, where the tumbling rill makes soft music all the day, came, half unheard, the song's sweet repetition. 'Twas the matins of the hermit thrush, rare minstrel of the mountain forests. Garbed in soft brown friar's frock, a monk well content to worship lone at Nature's shrine! Naturalists have told and poets sung of the hermit's wonderful song. It is in truth a marvelous measure, containing all those characteristics of liquidity and bell-tone which make the thrush-song the highest expression of bird-music. But it is largely the always-enhancing circumstances which give it special credit above other thrush carols, although it has its own peculiar and indescribable special characteristics. Haunting the dense woods of the whole North American continent the hermit thrush is yet rarely heard, and worse, if heard, more rarely recognized. . . . As the last echoing *ki-will-ah-ee*, like the tinkling of small bells, died away and a flush of light stole visibly down the long lanes, F——n lifted his dripping head from the pool and grunted expressively, "This is a mighty religious sort of place, up here."

FROM REDDING TO THE SNOW-CLAD PEAKS  
OF TRINITY COUNTY;\*

ALSO,

LIST OF TREES AND SHRUBS SEEN EN ROUTE.†

BY ALICE EASTWOOD.

In August, 1899, Dr. C. Hart Merriam, Chief of the United States Biological Survey, and his assistant, Mr. Vernon Bailey, made a scientific exploration of these little-known mountains which form part of the northern boundary of Trinity County and from which the chief branches of Trinity River take their rise. These scientists reported unusual physical features, wildness and grandeur of scenery undreamed of, and, besides, brought back a small but very interesting collection of plants from the summits of the ridges; so that it seemed as if life would lose its zest if these mountains could not be reached, their rugged peaks climbed, their botanical treasures collected, and their dangers and difficulties overcome. Our party consisted of Mr. S. L. Berry, Mr. Carlos T. Hittell, Dr. Kaspar Pischel, and the author.

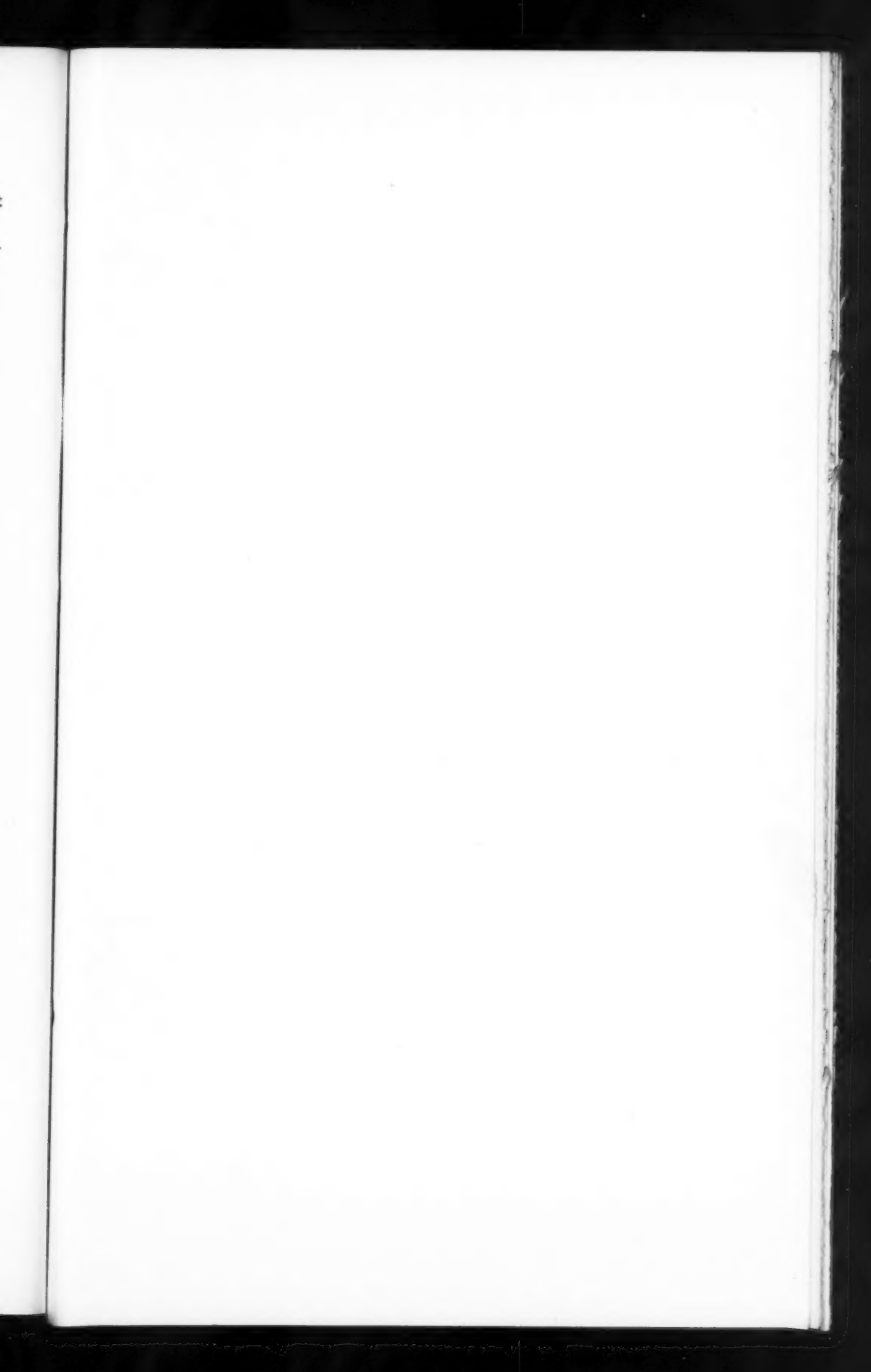
Neither mules nor burros were to be had in Redding and we were compelled to take horses. The horses that we obtained at the stable of Vannah & Saunders were so poor as to be a disgrace even to the pack-horse tribe. They were on their last legs and gave us great trouble and delay, almost causing the complete failure of the trip.

We left Redding about ten o'clock the morning of July 2d, leading our extremely quiet beasts, planning where we

\* See page 66 for Route and Camps. † See page 53 for List of Trees and Shrubs.

would be by night, and indulging in dreams of at least twenty miles a day.

The first day out we passed through a rolling country where occasional small streams crossed the road, some of them containing a little water, but most of them dry. The road was very dusty, as is usual at this time of the year; but the oldest inhabitant never remembered to have seen the dust so bad as this year. This was caused by the increased freighting which the development of the Sweep-stake Mine is inducing. It was the country of the digger pine (*Pinus Sabiniana*), which found no breeze in which to wave its gray-green plumes. The pale gray manzanita (*Arctostaphylos viscida*) everywhere prevailed, forming great bushes almost treelike. Along the stream-banks and in the beds of dry streams the button-willow (*Cephalanthus occidentalis*) was in full bloom and refreshed the eye with its bright green foliage and its globular heads of whitish flowers, while its fragrance perfumed the air as we passed some distance away. Now and then a bush of redbud (*Cercis occidentalis*) was seen, with its clean, round, green leaves and its purple pods. *Quercus Wislizeni* is the live-oak of the region. It forms round, compact trees with holly-like leaves. There were besides, the blue oak (*Q. Douglasii*) and the black oak (*Q. Californica*). *Ceanothus integerrimus* and *C. cuneatus* were the most common species of Californian lilac, the former having loosely-flowered panicles of white or pale blue flowers, and bright green alternate leaves, the latter with rigid opposite branches, small gray-green wedge-shaped leaves, and small compact clusters of white flowers all over the stems when in bloom in the spring. Poison-oak climbed over the bushes or grew in clumps and was already beginning to turn red. *Rhamnus Californica* (the coffee-berry) was common and gave promise of much fruit. Everywhere the wild grape hung in graceful festoons over the trees or





SUNSET PEAK FROM UPPER LAKE IN WESTERN AMPHITHEATER.  
From a photograph by Carlos T. Hittell.

Thompson's Peak  $\frac{1}{v}$



THOMPSON'S PEAK AND LOWER TWIN LAKE.  
From a photograph by Carlos T. Hittell.

clothed fences. Occasionally *Clematis ligusticifolia* climbed over the bushes, and was seen either in full bloom with its panicles of starlike, white flowers, or with the globular heads of seeds beginning to be plumose. Poplars and alders grew along the streams.

As we approached Shasta, an old mining town, *Pinus attenuata* and *P. ponderosa* began to appear, and in some places the valley oak (*Quercus lobata*) was noted, though not so common nor so fine as in localities where the soil is richer and more moist. Between Shasta and Whiskytown *Cupressus Macnabiana* was found, perhaps the locality where this cypress was first discovered. As we climbed the hill separating these two places, once the scenes of great activity, wild revelry, and wasted lives, now dead and deserted, new trees and shrubs were seen, the big-leaved maple of the Pacific Coast (*Acer macrophyllum*), the buck-eye (*Æsculus Californica*), the wild cherry (*Cerasus demissa*), the wild plum (*Prunus subcordata*), the sweet shrub (*Calycanthus occidentalis*), *Styrax Californica*, the mock orange (*Philadelphus Gordonianus*), several species of dogwood, all so covered with dust as to be scarcely recognizable. From the top of this hill a fine view of the whole country can be seen, the Sacramento Valley lying to the east, the mountains to which we were traveling to the northwest, while to the northeast Mt. Shasta loomed up grand and solitary, twice as high as any other mountain.

It was about six in the evening when we reached Whiskytown. As we could buy food for the horses at the stable and there was a fine spring near the bridge and a level place adjacent, we decided to make this our first night's camp.

The next day was hot and the road very dusty. We passed several freighting-wagons, canvas-covered and drawn by from four to ten animals. The most beautiful place on the road is the well-known Tower House, a haven of rest, coolness, and shade. Great trees spread their branches over

the road, which is kept free from dust by the frequent use of the hose. Long ago *Melia Azedarach* was planted through this country as a shade-tree, and has become thoroughly naturalized. Young trees were seen everywhere as we traveled along the road.

We had heard of a trail not far from here that led to Lewiston, and we longed to reach it, so as to be out of the horrible dust. It was on this trail, by the side of a stream of good water, that we made our noon camp. It was a beautiful place, full of trees, beneath which the white flowers of the *Philadelphus* gleamed in their purity; the tropical-looking *Aralia* grew luxuriantly in wet places, but was not yet in bloom; the buckeye and redbud, the maples and oaks abounded through the little valleys and on the adjacent hills. Tiger-lilies bordered the streams in places, and the bright scarlet California pink peeped from under the shrubs. The trail led to the summit of a high hill from which Mt. Shasta was again visible.

It was here that "Tom" gave out and seemed to be scarcely able to walk; so we decided to camp where we first found water and see whether it would be possible to obtain another horse at Lewiston, which was distant about five miles.

After much trouble, many discouragements, and a delay of a day and a half, a young mare was obtained from Mr. William Hampton, of Lewiston, and we left the old horse in a pasture until our return. This mare proved to be a valuable animal, sure-footed, accustomed to keeping free from the rope when tied, and determined to neglect no opportunity to graze either on the trail or in the pasture.

Dr. Pischel, whom we expected to meet at Weaverville, was intercepted at Lewiston, and came to our camp in the cañon instead of going on.

This cañon was one of the loveliest places and the most interesting to a botanist of any that we passed on the way



to Cañon Creek. Here *Philadelphus* was glorious, the vine-maple (*Acer circinatum*) was common; one tree of the chestnut-oak (*Quercus densiflora*) was noted, the only one seen on the trip; the rare *Ribes Lobbii* was seen for the first time; *Cornus sessilis* was in fruit, and the most beautiful of all the honeysuckles of California (*Lonicera ciliosa*) held out its flame-colored flowers over the bushes like a torch to illumine the darkness of the cañon in the shade of evening, when it was first seen, a surprise and a never-to-be-forgotten delight. The California yew (*Taxus brevifolia*), the incense cedar (*Libocedrus decurrens*), the fir (*Abies concolor*), the yellow pine (*Pinus ponderosa*), the sugar pine (*P. Lambertiana*), were all there, while the Douglas spruce (*Pseudotsuga mucronata*) reached a fine development and fruited most abundantly. Madroños and alders, maples and oaks prevailed amid these other trees.

It was on the afternoon of July 5th that we reached Lewiston, a small farming town on the Trinity River. From there we went by trail to the summit of a hill separating Lewiston from Weaverville, and camped at a beautiful upland meadow known as Packer's Camp. It was about sunset when we arrived, and Mt. Shasta was in the glow of the setting sun. Wherever this mountain appeared, it rose like a giant over the other mountains which were to be seen on every side. Here again we met beautiful sugar pines. The generally prevalent black oak was replaced by *Quercus Garryana*. This upland meadow was like a park, the rolling surface, "tanned by summer's breath," formed a fine background for the beautiful oaks and the picturesque pines. From the western summit we saw distinctly for the first time the mountains for which we were aiming; but it was not until we had learned their outlines by intimate acquaintance that we knew them to be the same.

At last, about 10 on the morning of July 6th, we reached Weaverville, a day and a half after the expected time. This

is the county seat of Trinity County and one of the few towns of '49 which is still flourishing. Before noon we climbed the hill which separates the town from the La Grange Mine. It was hot and dusty beyond any place that we had passed, for we were approaching the goal of all the freighting-wagons. When we at last reached water we were too tired, hot, and thirsty to eat, and made but few preparations for lunch. In the afternoon we passed the great La Grange Mine, where the hydraulic giants were washing away the mountains and filling the river-bed below with an artificial moraine of rocks and débris. It is desolation and ruination of the natural features of the country, and the result on the landscape is typical of the effect on humanity of the greed for gold.

Late in the evening we reached Anderson's ranch, the first place near Junction City where we could obtain pasture for our horses, wood, water, and a place to camp. About eight the next morning we passed Junction City and another big placer mine, owned by a French company. We were now on Cañon Creek, the stream which we were to explore to its source. From the first it was most interesting and beautiful. In one place it had worn a labyrinthine course through the solid rock, in other places it was bounded by clifflike walls, while the banks opposite were bordered with fresh green trees and shrubs, untainted by the dust of the road. Here I saw the only bush of azalea that was noted on the entire trip. Blackberries and black raspberries were quite common, and were ripening. We often stopped to eat the fruit. It was along this road that we came across several colonies of Chinese engaged in placer mining with all the modern methods—hydraulic giants, pipes, and flumes. Now and again we walked through old placer washouts where the trees had begun to reassert their sway. Occasionally we passed a lonely cabin in which some old miner lived. These men seemed like the

driftwood of humanity left behind on the great tide that swept over the country in the days of '49. They were chatty and liked to talk of olden times. There seemed to be traces of deserted ranches everywhere, represented by fruit-trees uncared for, but usually having a small crop of apples or peaches.

At last, about 6 in the evening, we reached the small town of Dedrick. This was the terminus of civilization, and the next day would find us in the unknown country which we had come so far to see.

We were told of a place up the cañon where we could get pasture for our horses, but were misdirected and went about a mile up the steep grade to the Chloride Mine before finding our mistake. It was late when we reached the camp, tired and hungry, and with the horses ready for a better feed than the scanty pasture promised.

Very little seemed to be known of the trail or the cañon by the people whom we asked. They told us that we would have difficulty in fording the creek, that the fords were many and, at this time of the year, dangerous, and that the trail would be hard to find, on account of being overgrown with brush and obstructed by fallen trees.

The next morning, however, we started early with brave hearts but with many misgivings. One or more generally went ahead to explore while the others stayed behind with the animals, and we all took turns at leading the beasts. There were altogether seven fords from Dedrick to the upper lake. Every one was a horror to me; but the men roped the animals over without any accidents, and at all except one we found logs on which to cross. One log was especially shaky and dangerous. It was high above the water, which formed a pool twenty feet deep below.

All through this beautiful cañon, rare and lovely flowers grew. Five species of the dainty *Pyrola*, two species of *Campanula*, the rare ghost-orchid, *Cephalanthera*, *Chima-*

*phila*, *Vancouveria*, all flourished in the shade of the forest. *Clintonia uniflora* carpeted the ground in shady places where the hot sun could not wilt its pure white, starlike flowers. The rare *Lewisia cotyledon* was seen for the first time near one of the fords, strikingly beautiful, bearing panicles of bright pink flowers.

The first falls are the best known, as few people go any higher. This fall we christened "Hound's-Head Fall" from a rock shaped like a hound's head, which jutted out on one side as if looking into the cataract. From there on, the creek was a succession of most lovely cataracts, any of them more beautiful than the falls near the forks of Bubbs' Creek in the King's River country.

We were two days in reaching Twin Lakes, a distance of nine miles. We had to cut trails through the brush; for we completely lost the trail in one place, having been led astray by some predecessor. It was a wild country that we were approaching—granite peaks clothed with snow, but with trees even to their summits, lakes of great beauty, and creeks and waterfalls everywhere. Here we saw for the first time the weeping spruce (see photograph), one of the rarest trees in California, though more common in Oregon. It is a singular-looking tree, and would attract attention anywhere. The tree is pyramidal in general outline, but rarely symmetrical: it is branched from the base with horizontal branches. From these branches the branchlets hang like long thick fringe from one to several feet in length. The tree has the appearance of being draped or veiled with these slender branchlets. The cones hang from the upper branches, and the old ones persist after having discharged their seeds.

From Redding to Twin Lakes we had passed three zones of trees, the first represented by the digger pine (*Pinus Sabiniana*), the second by the sugar pine (*Pinus Lambertiana*), and the third by the mountain pine (*Pinus*

*monticola*). The gray-green manzanita (*Arctostaphylos viscida*), which had prevailed where the digger pine grew, overlapped into the zone of the sugar pine. In this zone, *Arctostaphylos patula*, the manzanita with smooth, bright green foliage and large berries, was the common species. This also overlapped into the zone of the mountain pine, but was uncommon, being replaced by the low manzanita which clings to the rocks or spreads like a mat over the ground, known as *Arctostaphylos Nevadensis*. In the upper regions this manzanita was in flower, gemmed with the clusters of pearl-like, pure white flowers. The yellow pine reached the zone of the mountain pine, but Douglas spruce had been left some distance behind down the cañon. A few storm-beaten and most picturesque trees of *Libocedrus decurrens* were seen all along the trail from Dedrick to the lakes. Fine specimens of hemlock-spruce (*Tsuga Merteniana*) grew on the banks of the lakes and high up on the mountains to the summits of the ridges. In the neighborhood of the lakes the red fir (*Abies magnifica Shastensis*) (see photograph) was common.

Beautiful shrubs grew all around. *Bryanthus empetri-formis* formed mats of mountain heather laden with deep rose-colored bells. *Leucothæ* and *Ledum* flourished in the swamps together with the mountain ash, the wild cherry, the meadow-sweet, the small-flowered bush-honeysuckle (*Lonicera conjugialis*), and all were in full bloom. The most abundant shrub seemed to be *Ceanothus velutinus*. This formed the most disagreeable brush to penetrate where there were no trails; for it grew so tall and so rank and with such unyielding stems. The fragrance of its foliage added to that of its flowers made it attractive in spite of being so great an obstacle to our progress. The mountain maple (*Acer glabrum*) grew along the lakes, and what seems to be a new species of fringe-bush, or *Garrya*, was common. The low-spreading oak (*Quercus vaccinifolia*)

clothed the rocks of the talus almost to the summit of the ridges; more often it helped instead of hindering our progress. A peculiar shrubby yew was also abundant in places, forming dense thickets. From the time that we left the last madroño, near the foot of Hound's-Head Fall, we had gone from a flora very similar to that of the coast under the redwoods and had reached one subalpine in character, within a distance of less than nine miles.

We passed great slopes of granite polished by glacial action to almost the degree that granite is polished for monuments or buildings. Glacial scratchings were everywhere and big rounded boulders frequent. Piles of talus almost covered by brush seemed to prevail on the eastern side of the cañon; but in the main amphitheater, the smooth granite covered great areas. Higher up the granite became sharper in the outline of the boulders and cliffs. There was an awfulness about the summits that was forbidding. The ridge was a succession of pinnacles and cliffs—a regular Sierra. Not one of the peaks was easy climbing at the top.

Our camp lay about a quarter of a mile below the lowest lake, a short distance from the trail and not far from a small stream of ice-cold water which came from the snow-banks of the mountain on the east. It was in the open, on the rocks. We camped here because in the meadow below there was good feed for the horses. We were dry and much warmer at night on these rocks and almost free from the mosquitoes and other insects which were a pest in the wet meadow below. To be sure, we had no shade, but we did not expect to be in the camp by day, and at night it made no difference. Every evening we watched the rays of the sun leave one peak after another, and that on which they rested longest we named Sunset Peak. From behind the next peak to the south the planet Jupiter rose after sunset and made a beautiful picture in the evening sky; so we named this mountain Mt. Jupiter. The sky was wonder-

fully clear, and all the summer constellations shone out with great distinctness; the Milky Way and the Scorpion on one side, the Great Bear and Perseus on the other, while Vega and Corona were in the zenith above.

The birds were numerous and very musical. Never have I heard so many songs as greeted us every morning about the break of day. We saw linnets, thrushes, and water-ouzels. I heard one of the last chirping gayly as he danced in and out of a cataract where he was looking for insects. Small game seemed to be scarce. We saw a few grouse—scared up one mother bird on a nest of five eggs.

The first expedition was to attempt the ascent of Thompson's Peak (see photograph), the highest mountain of the group. The ridge was ascended on the western side of the upper lake to the summit. It was very steep and rough; in some places great tracts of snow had to be crossed, and when the summit of the ridge was reached, the succession of cliffs, pinnacles, and knife-edges that intervened between the point to which we had ascended and the peak which seemed the highest showed that it was too late in the day to begin to make an attempt to reach it, even if it were at all possible from that side.

The peak which we climbed to the summit was that which we had named Sunset Peak (see photograph). We started from our camp at its foot and made the ascent along the course of the stream and the snow-banks. Every step was an upward one, but not dangerous, though to look back upon the course by which we had come made one dizzy with its precipitous slope. We kept out of the snow as much as possible, climbing over the talus whenever we could. Beautiful flowers bloomed where the snow had melted a few days before. Beds of crimson *Bryanthus*, clumps of *Anemone occidentalis*, with large flowers as white as the snow which had so recently covered them, *Saxifraga*, *Arnica*, *Caltha*, *Trifolium*, *Aster*, *Erigeron*, *Potentilla*, *Aquilegia*

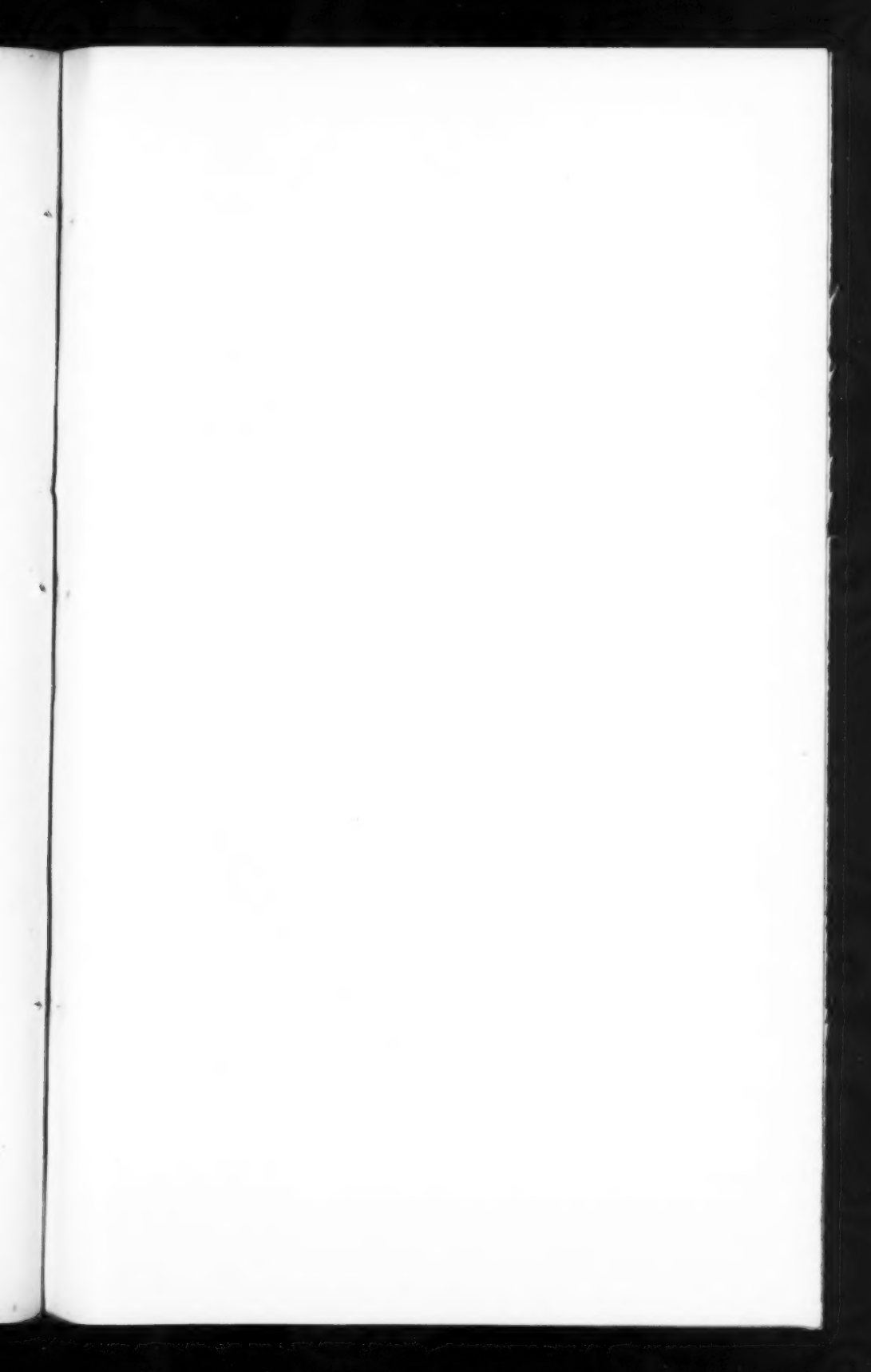


*Pentstemon*, *Mimulus*, *Tofieldia*, and *Hastingsia*. On the summit of the ridge we found *Cassiope* in full bloom, a yellow-flowered *Draba*, a beautiful *Pentstemon*, and even up here the hardy hemlock-spruce had climbed, one little tree being found laden with purple cones.

From the summit of the ridge to the summit of the peak the ascent was made over great blocks of granite, but none so high as to be climbed with any difficulty. Mr. Hittell was ahead, and had climbed a cliff from which he could not descend. How he had managed to get up with his camera on his back was a mystery. Mr. Berry and I used a rope to make the ascent to the top of the rock on which Mr. Hittell sat, and from there to the summit it was easy work. The most beautiful view of Mt. Shasta was had on the way up this cliff. To see this mountain at its best it must not be seen from too near, for its immensity does not impress one on account of the absence of anything with which to compare it. It must not be seen from too far, as I saw it once from the top of Mt. St. Helena, for its outlines are too dim; but from the distance and elevation of these mountains, its great size and its grandeur as a mountain can never be forgotten.

From the top of this peak we had a chance to see the country near at hand and decide what parts to explore before we had to return. On all sides were amphitheaters at the foot of rugged granite peaks similar to that on which we stood. Great snow-covered slopes spread between these crests and lost themselves in green meadows and dashing torrents. We rolled some rocks down on to one of these snow-banks and started an avalanche. We could hear the swish of the snow a thousand feet below and looked down upon this torrent of snow as it sped swiftly along, with the snow on each side as unmoved as the rocky banks of a river. The peak which rose beside the one on which we stood seemed to be the higher, but we had no instru-







WEeping SPRUCE—*Picea Breveriana*.

CAÑON OF CAÑON CREEK

From a photograph by S. L. Berry.



SHASTA FIR—*Abies magnifica Shastensis*.

RIDGE WEST OF THE MAIN AMPHITHEATER ABOVE THE LAKE.

From a photograph by S. L. Berry.

ments by which we could tell and had no time to make the ascent; so we took a picture of it to show the general character of these rocky summits. Mr. Berry went down the way that we had come up, jumping from the cliff to a snow-bank below. Mr. Hittell and I returned by the other side, and soon found that it was not so easy as it promised. After about an hour of careful work and the almost constant use of the rope, we managed to reach a place where the descent was easy.

Our next expedition was to the foot of Thompson's Peak, or what we took to be that mountain. This is a cone-shaped peak, apparently difficult to climb, and would have taken two days from our camp. We did not have the time, and gave it up. There was no trail above the upper lake, and we had to make our way through the brush. We kept up, but found on the return that it would have been easier to have skirted the eastern edge of the lake as closely as possible. On the western side the rocky cliffs come down to the water, and it is not possible to go on that side without climbing half-way up the mountain. The water in the streams above the second lake was the purest that I have ever seen. It flowed over granite that was almost as white as snow, and every pebble could be counted at the bottom of pools and streams. Here the willows were beginning to bloom, the *Kalmia* still held its pink flowers, and *Dicentra uniflora* had not disappeared.

The day after, we devoted to the exploration of the western amphitheater which we had seen from Sunset Peak. We found this full of little lakes on two benches. The lower bench held a cluster of four or five, more or less in a chain; the upper a pair of twin lakes almost surrounded by snow-banks. We stood under one snow-bank more than ten feet high.

It was on the way up here that we saw a bear. Mr. Hittell was ahead sketching; I was in the rear. Mr. Berry

called to me to come quickly. On the opposite side of the stream which came from the lower chain of lakes, walking along a bench of rock on the side of the cliff, was a big cinnamon bear, not fifty yards away. He looked at us undisturbed and we looked at him. We tried to call to Mr. Hittell, but he was too far ahead; the sound of the cataracts deadened our voices, and he did not understand our signs. Mr. Berry had only a 38-caliber Smith & Wesson, but he shot at the beast and really hit him, for the bear shook his head and his paws and trotted on. The sting of a small bullet at the distance was probably no more than the sting of an insect. Again Mr. Berry shot, and this time the bear became really scared, turned, and ran off as fast as he could in the direction whence he had come. Mr. Hittell's chagrin was great when he learned what a chance he had missed.

The next day, July 15th, we began the return trip. We had no difficulty in finding the trail or in getting over the fords, and in consequence were only a day in returning to Dedrick. From there on, the journey was without incident. Near Lewiston we gave up the mare with regret and again took Tom, apparently as stiff and lame as when we left him in the pasture two weeks before. We were two days and a half in reaching Redding, but rejoiced that we got him there alive.

The easiest and quickest way to reach these mountains is by stage to Dedrick. The journey takes two days from Redding. We were uncertain about getting pack-animals at Dedrick, therefore we packed from Redding and walked.

TREES AND SHRUBS SEEN EN ROUTE.\*

(ARRANGED IN THE ORDER OF THE FAMILIES.)

TAXACEÆ.

*Taxus brevifolia*, Nutt., YEW. Lewiston Trail.

*Taxus*. An unknown shrubby species; perhaps only a variety of the preceding species. Found around the lakes.

CONIFERÆ.

*Pinus Lambertiana*, Dougl., SUGAR PINE. Divide between Tower House and Lewiston; between Lewiston and up Cañon Creek, but not to the lakes.

*Pinus monticola*, Dougl., MOUNTAIN PINE. The common species around the lakes.

*Pinus ponderosa*, Dougl., YELLOW PINE. Common from near Shasta to the lower lake.

*Pinus Sabiniana*, Dougl., DIGGER PINE. Common around Redding to beyond Whiskeytown.

*Pinus attenuata*, Lemmon, KNOB-CONE PINE. Near Shasta and Whiskeytown.

*Picea Breweriana*, Wats., WEEPING SPRUCE. (See photograph.) From Hound's-Head Falls to the lakes.

*Pseudotsuga mucronata*, Sudw., DOUGLAS SPRUCE. Lewiston Trail, Cañon Creek.

*Tsuga Mertensiana* (Bong), Carr, HEMLOCK SPRUCE. Around the lakes and up the mountains adjacent.

*Abies magnifica Shastensis*, Lemmon, SHASTA FIR. (See photograph.) Around the lakes.

*Abies concolor*, Parry, WHITE FIR. Lewiston Trail.

*Libocedrus decurrens*, Torr., INCENSE CEDAR. Lewiston Trail, Cañon Creek.

*Cupressus Macnabiana*, Murray, GRAY CYPRESS. Between Shasta and Whiskeytown.

SALICACEÆ.

*Populus Fremonti*, Wats., COTTONWOOD. Between Whiskeytown and Redding.

*Populus trichocarpa*, T. & G., BALSAM COTTONWOOD. Lewiston Trail.

*Populus tremuloides*, Michx., ASPEN. Twin Lakes and in the meadows below.

\* See page 39 for account of trip.

*Salix*, WILLOW. Several species not yet determined. They were not in good condition except near the lakes.

#### BETULACEÆ.

*Alnus Oregona*, Nutt., ALDER. Along streams at the lower elevations.

*Alnus tenuifolia*, Nutt. At the upper parts of Cañon Creek; blooming after the melting of the snow.

#### CUPULIFERÆ.

*Corylus Californica*, Rose, HAZEL. Lewiston Trail, Cañon Creek.

*Castanopsis 'chrysophylla* A. DC., CHINQUAPIN. Cañon Creek.

Two forms of this were seen, one approaching *C. semper-virens* Dudley.

*Quercus Breweri*, Engelm., BREWER'S OAK. Cañon Creek.

*Quercus Californica*, Cooper, BLACK OAK. Common everywhere except at the highest elevations.

*Quercus chrysolepis*, Lieb., GOLDEN-SCALE OAK. Along streams everywhere below the higher elevations.

*Quercus vaccinifolia*, Kellogg, CREEPING OAK. Around the lakes and up to the summits of the ridges.

*Quercus densiflora*, H. & A., CHESTNUT OAK. Lewiston Trail.

*Quercus Garryana*, Dougl., GARRY'S OAK. Packer's Camp.

*Quercus lobata*, Nee, VALLEY OAK. Near Whiskeytown.

*Quercus Douglasii*, H. & A., BLUE OAK. Redding to beyond Shasta.

*Quercus Wislizeni*, A. DC., LIVE OAK. Redding to beyond Whiskeytown.

#### ARISTOLOCHIACEÆ.

*Aristolochia Californica*, Torr., DUTCHMAN'S PIPE-VINE. Tower House and near Shasta.

#### RANUNCULACEÆ.

*Clematis ligusticifolia*, Nutt., MAIDEN'S BOWER. Here and there along the road from near Redding to the Lewiston Trail.

#### BERBERIDACEÆ.

*Berberis nervosa*, Pursh., BARBERRY. Lewiston Trail, Cañon Creek.

*Berberis pumila*, Greene. Lewiston Road. Specimens were not collected.

#### CALYCANTHACEÆ.

*Calycanthus occidentalis*, H. & A., SWEET SHRUB. Lewiston Trail; also in other places.

SAXIFRAGACEÆ.

*Philadelphus Gordonianus*, Lindl., MOCK ORANGE, SYRINGA. Lewiston Trail. In many places along the road.

*Philadelphus Californica*, Benth. Cañon Creek.

*Ribes Lobbii*, Gray. Lewiston Trail, Cañon Creek.

*Ribes amictum*, Greene. Lewiston Trail, Cañon Creek.

*Ribes divaricatum*, Dougl., WILD GOOSEBERRY. Lewiston Trail.

*Ribes*. WILD CURRANT. Near the lakes. This is probably a new species near *R. sanguineum* Puroh.

ROSACEÆ.

*Neillia opulifolia*, VINE-BARK, BRIDAL-WREATH. Lewiston Trail, Cañon Creek.

*Spiræa Douglasii*, Hook., HARDHACK. Lewiston.

*Spiræa*. Another form of what is perhaps the preceding species grew in Cañon Creek near the lakes, but it was scarcely in bloom when we left.

*Holodiscus discolor*, Maxim, MEADOWSWEET. Cañon Creek.

*Cratægus* sp., HAWTHORN. Lewiston Trail; apparently two species.

*Sorbus occidentalis*, Greene, ROWAN, MOUNTAIN ASH. Cañon Creek and Twin Lakes.

*Heteromeles arbutifolia*, Roem., TOYON, CHRISTMAS-BERRY. Along the road from Redding to Whiskeytown.

*Amelanchier alnifolia*, Nutt., SERVICE-BERRY. Especially common in Cañon Creek, and forming part of the brush around the lakes.

*Rubus leucodermis*, Dougl., BLACK RASPBERRY. Lewiston Trail, Cañon Creek.

*Rubus parviflorus*, Nutt., THIMBLEBERRY. Lewiston Trail, Cañon Creek.

*Rubus vitifolius*, C. & S., BLACKBERRY. Everywhere except at higher elevations.

*Cercocarpus parviflorus*, Nutt., MOUNTAIN MAHOGANY. In many places along the road.

*Adenostoma fasciculatum*, H. & A., CHEMISAL. Rarely observed along the road.

*Rosa gymnocarpa*, Nutt., WOOD ROSE. Cañon Creek, Lewiston Trail.

*Rosa* sp. Cañon Creek.

*Prunus demissa*, Walp., CHOKE-CHERRY. Cañon Creek, Lewiston Trail.

*Prunus subcordata*, Benth., WILD PLUM. Between Shasta and Whiskeytown and in other places.

*Prunus emarginata*, Walp., WILD CHERRY. Especially common around the lakes.

#### LEGUMINOSÆ.

*Cercis occidentalis*, Torr., REDBUD. Common along the roads and trails except in the upper elevations.

#### RUTACEÆ.

*Ptelea Baldwinii* parvifolia, A. Gray, HOP-TREE. Near Redding along the road.

#### MELIACEÆ.

*Melia Azederach*, L., TREE OF HEAVEN. Introduced everywhere in the vicinity of settlements.

#### ANACARDIACEÆ.

*Rhus trilobata*, Nutt., SQUAW-BUSH. Lewiston Trail.

*Rhus diversiloba*, T. & G., POISON-OAK. Common everywhere below the higher elevations.

#### CELASTRACEÆ.

*Pachystima Myrsinites*, Raf., MOUNTAIN MYRTLE. Cañon Creek.

#### ACERACEÆ.

*Acer circinatum*, Pursh., VINE-MAPLE. Lewiston Trail.

*Acer glabrum*, Torr., MOUNTAIN MAPLE. Twin Lakes.

*Acer macrophyllum*, Pursh., BIG-LEAVED MAPLE. Lewiston Trail, Cañon Creek.

*Æsculus Californica*, Nutt., BUCKEYE. Lewiston Trail, Cañon Creek.

#### RHAMNACEÆ.

*Rhamnus Californica*, Esch., COFFEE-BERRY, CASCARA SAGRADA. Two forms of this were observed—one with narrow leaves, along the road at lower elevations; the other with broad leaves, common around the lakes. Perhaps a variety of *Rhamnus Purshiana*, DC.

*Rhamnus tomentella*, Greene. Near Shasta and Whiskeytown.

*Rhamnus crocea*, Nutt. Whiskeytown.

*Ceanothus cuneatus*, Nutt. Common except at higher elevations.

*Ceanothus integerrimus*, H. & A. The same range as the preceding.

*Ceanothus Lemmoni*, Parry. On the hill between Lewiston and Weaverville.



*Ceanothus velutinus*, Dougl. The common species in Cañon Creek and around the lakes.

*Ceanothus prostratus*, Benth., MAHALA-MATS, SQUAW-CARPETS. (Not typical.) Cañon Creek, on the rocky hills.

VITACEÆ.

*Vitis Californica*, Benth., WILD GRAPE. Common everywhere along the road except at higher elevations.

CORNACEÆ.

*Garrya*, FRINGE-BUSH, QUININE-BUSH. Cañon Creek, around the lakes; new species.

*Garrya Fremontii*, Torr. Between Weaverville and Junction City.

*Cornus glabrata*, Benth., DOGWOOD. Lewiston Trail.

*Cornus Nuttallii*, Audubon. Lewiston Trail, Cañon Creek.

*Cornus sessilis*, Torr. Lewiston Trail.

*Cornus pubescens*, Nutt. Lewiston Trail and in other places near water.

*Cornus stolonifera*. Cañon Creek.

ERICACEÆ.

*Ledum glandulosum*, Nutt., LABRADOR TEA. Cañon Creek, near the lakes.

*Rhododendron occidentale*, Gray, AZALEA. Cañon Creek.

*Kalmia glauca*, L., MOUNTAIN LAUREL. Twin Lakes.

*Bryanthus empetrifolius*, Smith, MOUNTAIN HEATHER. Twin Lakes.

*Cassiope Mertensiana*, D. Don. On the summit of the ridge of Sunset Peak.

*Leucothoe Davisæ*, Torr. Cañon Creek.

*Arbutus Menziesii*, Pursh., MADRONO. Lewiston Trail, Cañon Creek.

*Arctostaphylos Nevadensis*, Gray, MANZANITA. Twin Lakes.

*Arctostaphylos patula*, Greene. Packer's Camp, Cañon Creek, and in many other places.

*Arctostaphylos viscida*, Parry. Common except at the upper elevations.

*Vaccinium cæspitosum*, Michx., HUCKLEBERRY. Cañon Creek, at the upper end.

STYRACEÆ.

*Styrax Californica*, Torr. On the road between Shasta and Whiskeytown.

## OLEACEÆ.

- Fraxinus dipetala*, H. & A., FLOWERING ASH. Near Weaverville.  
*Fraxinus Oregana*, Nutt. Near Lewiston and in other places.

## HYDROPHYLLACEÆ.

- Eriodictyon Californicum*, Torr., YERBA SANTA. Near Lewiston and in other places, but not common.

## SCROPHULARIACEÆ.

- Pentstemon Lemmoni*, Gray. Occasionally seen along the road at lower elevations.

## RUBIACEÆ.

- Cephalanthus occidentalis*, L., BUTTON-WILLOW, BUTTON-BUSH. Between Redding and Whiskeytown.

## CAPRIFOLIACEÆ.

- Sambucus glauca*, Nutt., ELDERBERRY. Occasional at lower elevations.  
*Sambucus callicarpa* Greene. At the upper lake; not yet in bloom. Perhaps not this species.  
*Symphoricarpos mollis*, Nutt., WAX-BERRY. Lewiston Trail, Cañon Creek.  
*Symphoricarpos racemosus*, Michx. Occasional along the roads.  
*Lonicera ciliosa*, Poir., HONEYSUCKLE. Lewiston Trail.  
*Lonicera conjugialis*, Kellogg. Upper end of Cañon Creek.  
*Lonicera interrupta*, Benth. Between Redding and Whiskeytown.

## COMPOSITÆ.

- Baccharis* sp. Unknown, and no specimen collected, as it was without flowers or fruit.

There were some low shrubby plants, such as *Vancouveria*, *Polygala*, *Chimaphila*, *Comandra*, *Erigonum umbellatum*, and *Smilax*, which have not been listed, as they are really herbs, though woody at base.

## SIERRA CLUB BULLETIN.

PUBLISHED IN JANUARY AND MAY OF EACH YEAR.

Published for Members.

Annual Dues, \$3.00.

*The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."*

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SECRETARY'S REPORT.

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This has in many respects been one of the most auspicious years in the history of the Club's existence. The initial Sierra Club outing, which was successfully undertaken and carried through during this past summer, has infused new life and spirit into the Club. It has created a companionship and unity of good feeling hitherto lacking. This outing alone has added at least fifty new members to the Club, and future proposed outings bid fair to increase our membership with a quota of most desirable and enthusiastic mountain-lovers.

Over one hundred people formed the outing party that was encamped in the Tuolumne Meadows. In spite of predictions to the contrary, the outing was a complete success, and one of the most positive proofs of this was the fact that the majority of those in attendance on this trip were planning for next year's outing almost before they had reached home. The objection raised by many before the outing started, that being with such a large party would be unpleasant, proved entirely without foundation. In fact, the association with so many genial spirits, and the valuable instruction obtained from the learned lights of the party, made it a pleasure and a memory never to be forgotten. The party was so large that one could select the companions he or she preferred. Owing to the fact that this was the first outing of its kind, the committee worked at a disadvantage and made expenditures that could be avoided another year. This, together with the numerous obstacles to be overcome on account of the poor condition of the Tioga Road, etc., made the expense of the

outing heavier than it would be another year. Yet after balancing accounts, a deficit of but about \$30 remains to be settled, and there is on hand to offset this nearly \$150 worth of outfit in the way of tents, stove, utensils, etc., which can be used on other trips.

For the information of those who were members of the party, it will be stated that the committee were compelled to make the final assessment of four dollars, thus covering the entire rebate on the railroad tickets of those who traveled via Raymond, and leaving a balance of \$1.25 still due from those who took the Santa Fe route.

Plans are now being matured which will make the Club's headquarters in the Yosemite Valley more permanent and successful than they have ever been in the past. The Club will be obligated to any one who will kindly donate additions to the nucleus of a library which is being started there. Works on travel and science interesting to mountaineers are particularly desirable. It is also requested on behalf of the Club, that persons finding objects of interest on their travels, whether they be botanical, geological, biological, or otherwise, contribute the same to the collection which is being started at the headquarters.

Any member desiring to purchase any first-class unlimited tickets over either the Southern Pacific or Santa Fe railroads will confer a great favor by getting an order for them from the Secretary of the Club and paying the price of such tickets into the Club treasury, thus enabling the Club to realize on the advertising contracts it owns.

Very respectfully,

WM. E. COLBY,  
*Secretary of the Sierra Club.*

## REPORT OF OUTING COMMITTEE.

## OUTINGS OF 1902.

The Sierra Club's Committee on Outing wishes to offer to the Directors the following suggestions as to the trips contemplated for the summer of 1902:—

1st. That the main trip, which will be taken under the personal direction of the Club through its committee, will be to the King's River Cañon and vicinity, and an opportunity afforded as many as may desire, to return via the Giant Forest.

2d. That excursions to the Yosemite Valley and the Colorado Cañon be also arranged for by the Club, but that these last will not necessarily be personally conducted by members of the Club.

3d. That fully-paid-up membership in the Sierra Club will entitle persons to join the outing party, and that qualified outsiders joining the outing must pay a fee in addition to the regular expense for the privilege of so joining.

In regard to the main outing, it is proposed to enter the mountains by way of Sanger, to which point railroad accommodations can be secured. From Sanger to Millwood, a distance of forty-six miles, stages will be provided, and at the end of the stage-road the party will immediately go into camp. Over the trails beyond this point the Club is not to be responsible for the transportation of anything other than baggage and freight, all members of the party being expected to walk the remaining distance of thirty-five miles, in from two to three days, though any person desiring to ride may be able to secure a saddle-horse on his own responsibility. The main camp will be established at the upper end of the King's River Cañon, and the objective

point for the mountain ascent shall be Mt. Brewer. From the main camp many splendid walks and high mountain climbs can be taken, and many may prefer to remain in the cañon enjoying the camp life, fishing, etc., during the whole outing. For those who wish to see the finest mountain scenery in the region,—the finest in fact to be found in the whole Sierra Nevada range,—an excursion will be arranged up the great cañon of Bubbs' Creek, to East Lake, from which the ascent of Mt. Brewer (13,886 feet) can be made. This point is chosen as furnishing, in the belief of your committee, the very finest mountain view to be obtained in the range, far surpassing that from Whitney, Williamson, or any of the higher summits. From East Lake the party will return to Bubbs' Creek, and proceed up its cañon to Bullfrog Lake, whence the Kearsarge Pass (12,050 feet) and University Peak (13,950 feet) may be climbed, and then return to the King's River camp. A pack-train will be running between Millwood and the King's River Cañon once or twice every week, so that mail can be sent out, and persons called away on business will have no trouble in leaving at almost any time. Large tents for general assemblage, cooks, packers, and pack-train, will be provided by the Club. It is expected that the high standard of excellence set last summer will in every way be maintained. The cost of the outing need not exceed forty dollars.

The main party will probably leave San Francisco about the 20th of June, and will remain away about three or four weeks. A prospectus will be issued during the spring, giving all details of the proposed trips.

Respectfully submitted,

J. N. LE CONTE,

E. T. PARSONS,

A. I. STREET,

WM. E. COLBY, Chairman,

*Outing Committee.*

## NOTES AND CORRESPONDENCE.

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*In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations together with brief comment and suggestion on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, forests, trails, geology, botany, etc., of the mountains, will be acceptable.*

*The office of the Sierra Club is at Room 45, Merchants' Exchange Building, San Francisco, where all the maps, photographs, and other records of the Club are kept.*

*There are but a few copies on file of No. 3, Vol. I., of the BULLETIN. The Club would like to purchase additional copies of that number, and we hope any member having extra copies will send them to the Secretary.*

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### ON THE NAMING OF MOUNTAINS.

The Editor is in receipt of a letter, from a prominent and active member of the Club, suggesting that some action should *immediately* be taken on the question of the naming of mountains. He states that he wishes that some Board might be formed by the mountaineering clubs, to whom new names for mountains could be referred for final approval. Readers of the BULLETIN are referred to the excellent suggestions as to names, published in Volume II, page 53, of the SIERRA CLUB BULLETIN.

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### MIDWINTER TRIPS IN THE SIERRA.

Professor Brown's appreciative description of the beauties of the winter Sierra (published February, 1901, in Vol. III, No. 3, p. 242 *et seq.* of the BULLETIN) will doubtless prove sufficient incentive to many in the valleys of California to undertake winter trips to the higher levels of the Sierra.

Such trips have already been made from the plateau of Nevada as early as the winter of 1895-96. The condition of the snow met with on the eastern slopes of these mountains, however, has compelled the use of an equipment more elaborate in one particular than that proposed by Professor Brown. I refer to the use of snow-shoes.

These were found in every case to be necessary for some portion of each trip, to avoid the fatigue caused by constantly breaking through the thin crust prevalent below the altitude of 8,000 feet. Above this altitude, however, except in autumn, the snow was hardened beyond the possibility of breaking beneath any ordinary



weight. During two winter trips to the summit of Mt. Rose, 10,800 feet in altitude, both ski and Canadian snow-shoes were used by the members of our party, to the increasing credit of the one and the final discredit of the other. The disparity between them was due wholly to the weight and clumsiness of the ski and the lightness and manageability of the Canadian snow-shoes. In one respect only were the ski found to be superior to their competitor. For example, on the long and comparatively level slopes, where even a novice could use them with safety, the ski afforded a means of fast locomotion, somewhat akin to skating, while the Canadian snow-shoes permitted no greater speed than a brisk walk. As the steepness of the slope increased, however, the speed of the ski gradually decreased to that of the Canadian snow-shoes, while they dragged heavily on the hips of the person propelling them. Moreover, when the region of soft snow and thin crust had been surmounted and snow-shoes were discarded for the exhilarating climb over the snow-fields about the summit, the Canadian snow-shoes were readily carried as a part of the pack without greatly increasing its weight, while the ski became almost unmanageable, being too heavy to carry with comfort and too erratic to tow by a rope. In fact, the experience of both trips was the same, viz: that the person who used the ski was thoroughly exhausted by the climb while the other who had used the Canadian snow-shoes remained comparatively fresh throughout the day. The irritating propensity of both kinds of snow-shoes to slide downhill on hard and sloping surfaces was corrected by binding a small stick with sharp edges across their under surface just beneath our feet, where the weight of the body readily forced the wood into the snow. In this way we were able to traverse with comparative ease and safety all the snow-fields except the very steepest. The most suitable Canadian snow-shoe for mountain work seems to me to be the narrow-pointed shoe with heavy rims, as shown in the following illustration. The ordi-



nary broad shoe will be found too clumsy and too frail. Among other desirable snow-shoes are the cheap, very light, and at the same time durable, "Algäue Schnee-Reifen," supplied either with



(a) FORM MIT HANFDRAHTSCHNÜRUNG.



(b) FORM MIT HOLZSPANGEN.

a rope mesh, as in (a), or with wooden slats, as in (b), for sale at M. 4 and M. 4.50, or including postage and duty scarcely more than \$2.50 and \$3.00, respectively, by Heinrich Schweiger, Munich, Rosenthal No. 7, Bavaria. Of these the former is more flexible, and therefore more comfortable to the foot; but a piece of wood should be bound across the bottom, as in the case of the Canadian snow-shoes, to prevent its slipping on an inclined surface. The serviceability of the rigid shoe (b) would also be largely increased by employing the same device.

The advisability of using snow-shoes under such conditions as those described by Professor Brown will be readily apparent in the consequent saving of one's shoes, which would otherwise soon be cut to pieces by the crust, or in the availability of the more comfortable rubbers and woolen leggings worn generally by woodsmen and mountaineers.

J. E. CHURCH, JR.

Reno, Nevada, November, 1901.

#### GENERAL DIRECTIONS AS TO ROUTE AND CAMPS IN TRINITY COUNTY.\*

The route to Cañon Creek from Redding lies along either of the two roads leading to the town of Shasta, over the divide to Whiskeytown, where is found the first good camp, and on to Tower House, where the road to Weaverville branches, the right-hand one going through French Gulch, the other taking a more southerly course; the former being the road the stage takes, the latter the route of the heavy freighting-wagons. By taking the left-hand road to Harris's Ranch, about three miles beyond Tower House, pack-horses can be taken over the Lewiston Trail, thereby saving much dusty traveling, and, instead, passing through two very beautiful gulches. The trail is somewhat steep in one place, but there is nothing beyond the strength of even a poor pack-animal. After about seven miles of trail, the Lewiston road is reached in

\* See page 39.

the vicinity of the town. By making some inquiries, the next trail can be found about a mile beyond the Trinity River, where it turns off to the left and climbs a hill to Packer's Camp, a pleasant place to stop for the night.

It is well to make very careful inquiries concerning the trails, as the directions are not always accurate and the roads sometimes interfere with what are otherwise well-defined trails: for instance, the Lewiston Trail leaves the road at Harris's, turns to the right up the gulch back of the barn, passes around a fenced field, and at the summit goes to the right again and reaches the road, where all trace of it is lost and only found again by going down the road to the left about three hundred yards, where it drops into the gulch on the left-hand side. Again, about one mile from Lewiston along the Weaverville road, there are two flumes passing over the road; beyond the second a small road turns to the left and goes to a ranch where the trail to Packer's Camp starts up the hill. From the camp the trail passes the summit, drops down the hill past an old sawmill, and connects with the road about four miles from Weaverville. From Weaverville the route lies along the road to Junction City, where Cañon Creek empties into Trinity River. Here the pleasant part of the trip commences; for here the road turns up the creek and follows it to Dedrick, twelve miles away, where the trail work begins.

The distances are about as follows: Redding to Shasta, six miles; to Whiskytown, six miles; to Tower House, six miles; to Harris's, three miles; to Lewiston, seven miles; to Weaverville, by trail, ten miles; to Junction City, ten miles; to Dedrick, twelve miles.

Leaving Dedrick, the trail turns to the left from the road within a few hundred yards of the hotel and winds along under the trees beside the creek, on the east side, to Bear Creek, about two miles above Dedrick. About one hundred yards beyond this point the trail turns abruptly and zigzags up the spur between Bear and Cañon Creeks, and when well up turns to the left and returns to Cañon Creek by a long descent. After two more detours, the old McKay cabin, located in a magnificent grove of trees, is passed, and soon the trees are succeeded by brush, extending to the first ford, which is one of the easiest in the cañon. The approach is down a steep bank, and the course is on to the lower end of the island, passing up this about two hundred yards and turning to the right, close to two superimposed logs, crossing back again to the east side. Some care will have to be exercised here, as the trail is not at all well defined, but by noting the indications and by making detours around obstacles, it may be followed to the brush below Hound's-Head Fall. The trail here leaves the creek and

returns to it at right angles above the falls and soon reaches the second ford, where it is necessary to cross to the west side, there being a log below the ford which may be traversed with some care. The trail is much obstructed at this point and requires a number of detours, but it will be found close to the creek at first; but gradually working away from it and returning at the third ford, which is shallow and easy for the animals. There is a log some three hundred yards up the creek, but the brush is dense and the ground swampy, and it is easier to wade. Here turn up the creek across the meadow to a large blazed tree which marks the entrance of the trail to the woods and keep fairly close to the creek to the fourth ford, where there is a log about two hundred yards above, reached by working back from the creek to avoid the denser brush along the bank. Above this point the trail works back from the creek to make a ford a little distance above the mouth of the branch which comes from the western amphitheater, above which it passes to the left of a cliff and returns near a small meadow to the fifth ford, one safe for the animals and easy for those on foot, by reason of the log to be found a few yards below. Follow the indications amongst the trees and up the rocky and brushy inclines near the falls; cross the meadow by working to the right and emerging at the northeast corner. Here the trail is very indefinite, but it is not very difficult to work out on the rocky slopes and find the trail as it enters the brush above.

If one wished to camp between the Twin Lakes, it is necessary to make another ford at the lower end of the lower lake, just below where the water breaks at its exit. Those on foot can walk the log below the cabin. From here there is a monumented trail leading to the upper lake, which works back to the cliffs to the west.

There is not much feed here for animals, and it may be necessary to camp below at the last meadow. Passage above the upper lake would be very difficult with animals, and is not easy without them. The most feasible route seems to be through the brush on the eastern edge of the lake, keeping as close to the water's edge as possible, thus gaining entrance to the upper amphitheater. Here in early July there remain large snow-fields.

The easiest way to Thompson's Peak, which is a sharp-crested mountain at the head of this amphitheater, is an open question. An attempt to reach it by the rough spurs forming the cliffs above the upper lake proved futile, as the distance around the amphitheater is too great for a one-day trip. The most direct route is up the main creek, but the peak may be inaccessible from that side. There is another large amphitheater containing lakes and snow-fields, and one to the west about two miles below Twin Lakes, with many small lakes and some magnificent scenery.

The peak which has been named Sunset Peak for want of another name may be ascended by a short, vigorous climb to the east, up the stream which waters the meadow a quarter of a mile below the lower lake. The lower of the twin pinnacles which form the summit may be reached from the saddle just north of it, there being only one place where any difficulty will be found. This is a wall standing almost vertical and having few projections for foot and hand hold. A rope is a convenience at this point. From the top of this peak there may be had a view which for wildness and grandeur is not excelled by any seen on a trip to the King's River Cañon and the mountain peaks at the head of Bubbs' Creek. Nor is there an equal area on King's River or Bubbs' Creek which contains so many of the features which go to make an ideal spot for lovers of wild mountain scenery. It is the same as that found in the High Sierra, with jagged granite peaks, knife-edge ridges, boulders, glaciated surfaces, high cliffs, beautiful lakes, and many waterfalls.

A permanent camp could be established and many days spent in exploring the surrounding country and in excursions over the ridges to the head waters of Trinity River, North Fork, and Salmon River. There are in the cañon, and within a radius of three miles of the camp, about eight mountain lakes, more than a dozen waterfalls, of various sizes, none combining height and volume, but all beautiful, many snow-fields and jagged peaks.

The distance from Dedrick to Twin Lakes is about nine miles, which, with no delays, should be made in a day and a half with ordinary pack-animals; while the return should be made in a day.

S. L. BERRY.

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CLARENCE KING.

Clarence King, the eminent geologist and scientist, died in Phenix, Arizona, December 24, 1901. He was born in Newport, R. I., January 6, 1842. When a boy he spent his long summer vacations camping out in the Green Mountains. He graduated from the Sheffield Scientific School of Yale University in 1862, and the year following came to California and accepted a position with Josiah D. Whitney, who was then making a survey of California. While with the survey he discovered and named Mount Whitney and Mount Tyndall.

He was a member of many scientific societies, and in 1876 was chosen a member of the National Academy of Sciences. He wrote for magazines and was the author of "Mountaineering in the Sierra Nevada," an admirable book full of interest.

The following extracts taken from his preface to his book show the deep interest he took in mountaineering and also his appreciation of the beauties of nature:—

"There are turning-points in all men's lives which must give them both pause and retrospect. In long Sierra journeys the mountaineer looks forward eagerly, gladly, till pass or ridge-crest is gained, and then, turning with a fonder interest, surveys the scene of his march; letting the eye wander over each crag and valley, every blue hollow of pine land or sunlit gem of alpine meadow; discerning perchance some gentle reminder of himself in yon thin blue curl of smoke floating dimly upward from the smoldering embers of his last camp-fire. . . . But as the cherished memories of Sierra climbs go ever with me, I may not lack the inspiring presence of sunlit snow nor the calming influence of those broad, noble views. It is the mountaineer's privilege to carry through life this wealth of unfading treasure. At his summons the white peaks loom above him as of old; the camp-fire burns once more for him, his study walls recede in twilight revery, and around him are gathered again stately columns of pine. . . . If along the peaks I have sought to describe there is reflected, however faintly, a ray of that pure splendid light which thrills along the great Sierra, I shall not have amused myself with my old notebooks in vain. (New York, March, 1874.)"

## FORESTRY NOTES.

EDITED BY PROFESSOR WILLIAM R. DUDLEY.

FORESTRY IN By far the most noteworthy contribution to the  
PRESIDENT literature of forestry in recent years is to be  
ROOSEVELT'S found in the President's Annual Message com-  
MESSAGE. municated to Congress December 3, 1901. It is  
remarkable that President Roosevelt is the first President since  
Washington who has made it clear from the beginning that he is  
not only President of the United States, but of the great National  
Domain itself. What he says of forestry, the arid lands, and irri-  
gation are clearly the words of one who has hunted, camped, and  
climbed among the mountains and traversed the dry plains of  
America's own personal estate west of the Mississippi. His words  
are such an admirable summary of what the Sierra Club has advo-  
cated for nearly ten years, that we quote them, as a matter of  
record:—

Public opinion throughout the United States has moved steadily  
toward a just appreciation of the value of forests, whether planted  
or of natural growth. The great part played by them in the crea-  
tion and maintenance of the national wealth is now more fully  
realized than ever before.

Wise forest protection does not mean the withdrawal of forest  
resources, whether of wood, water, or grass, from contributing  
their full share to the welfare of the people, but, on the contrary,  
gives the assurance of larger and more certain supplies. The  
fundamental idea of forestry is the perpetuation of forests by use.  
Forest protection is not an end of itself; it is a means to increase  
and sustain the resources of our country and the industries which  
depend upon them. The preservation of our forests is an impera-  
tive business necessity. We have come to see clearly that what-  
ever destroys the forest, except to make way for agriculture,  
threatens our well-being.

The practical usefulness of the national forest reserves to the  
mining, grazing, irrigation, and other interests of the regions in  
which the reserves lie has led to a wide-spread demand by the  
people of the West for their protection and extension. The forest  
reserves will inevitably be of still greater use in the future than in  
the past. Additions should be made to them whenever practica-  
ble, and their usefulness should be increased by a thoroughly  
businesslike management.

At present the protection of the forest reserves rests with the



General Land Office, the mapping and description of their timber with the United States Geological Survey, and the preparation of plans for their conservative use with the Bureau of Forestry, which is also charged with the general advancement of practical forestry in the United States. These various functions should be united in the Bureau of Forestry, to which they properly belong. The present diffusion of responsibility is bad from every standpoint. It prevents that effective co-operation between the Government and the men who utilize the resources of the reserves, without which the interests of both would suffer. The scientific bureaus generally should be put under the Department of Agriculture. The President should have by law the power of transferring lands for use as forest reserves to the Department of Agriculture. He already has such power in the case of lands needed by the Departments of War and the Navy.

The wise administration of the forest reserves will not be less helpful to the interests which depend on water than to those which depend on wood and grass. The water supply itself depends upon the forest. In the arid region it is water, not land, which measures production. The western half of the United States would sustain a population greater than that of our whole country to-day if the waters that run to waste were saved and used for irrigation. The forest and water problems are perhaps the most vital internal questions of the United States at the present time.

Certain of the forest reserves should also be made preserves for the wild forest creatures. All the reserves should be better protected from fires. Many of them need special protection because of the great injury done by livestock, above all by sheep. The increase in deer, elk, and other animals in the Yellowstone Park shows what may be expected when other mountain forests are properly protected by law and properly guarded. Some of these areas have been so denuded of surface vegetation by overgrazing that the ground-breeding birds, including grouse and quail, and many mammals, including deer, have been exterminated or driven away. At the same time the water-storing capacity of the surface has been decreased or destroyed, thus promoting floods in times of rain and diminishing the flow of streams between rains.

In cases where natural conditions have been restored for a few years vegetation has again carpeted the ground, birds and deer are coming back, and hundreds of persons, especially from the immediate neighborhood, come each summer to enjoy the privilege of camping. Some at least of the forest reserves should afford perpetual protection to the native fauna and flora, safe havens of refuge to our rapidly diminishing wild animals of the larger kinds, and free camping-grounds for the ever-increasing numbers of men and women who have learned to find rest, health, and recreation in the splendid forests and flower-clad meadows of our mountains. The forest reserves should be set apart forever for the use and benefit of our people as a whole and not sacrificed to the short-sighted greed of a few.

The forests are natural reservoirs. By restraining the streams in flood and replenishing them in drought, they make possible the use of waters otherwise wasted. They prevent the soil from washing, and so protect the storage reservoirs from filling up with silt. Forest conservation is therefore an essential condition of water conservation.



The discussion of the question of irrigation immediately following that of forestry, is equally pertinent and at greater length. Indeed, this subject has attracted greater attention during the last six months than forestry, and awakened greater interest than ever before. But in the national or State schemes whatever legislation advances one is pretty sure to assist the other.

APPROPRIATIONS  
TO THE BUREAU  
OF FORESTRY.

The following are the appropriations made by Congress to the Division (now the Bureau) of Forestry: In 1898, \$20,000; in 1899, \$40,000; in 1900, \$80,000; in 1901, \$146,280; esti-

mated for 1902, \$260,180.

Should the consolidation of the forestry work in the national forests be carried out this winter by Congress, as suggested by the President and urged by others for three years, the appropriation above given as the estimate by the Department of Agriculture for 1902 might be very greatly changed. It will be seen that the beginning of growth in the Congressional appropriation is nearly coincident with the settlement of the great controversy over the Cleveland Forest Reserves and the commencement of the work of the present Forester, Mr. Pinchot.

JUDGE WELLBORN'S  
DECISION REGARD-  
ING GRAZING ON  
THE RESERVES.

It will be remembered that several sheepmen were arrested in 1900 by order of the Secretary of the Interior for poaching on the Sierra Forest Reserve. The Federal Court convened at Fresno in November

of that year held that the Interior Department could not penalize the offenders, as it had no right to make encroachment on the reserve a penal offense without act of Congress. Civil suits were instituted, however, against the sheepmen, to recover damages. Hearing on these civil cases came up in the United States District Court late last spring. The *Fresno Republican* gives the following account of Judge Wellborn's decision sustaining the Interior Department in this important matter:—

The attorneys for the sheepmen in four cases, two against L. A. Blasingame and others, two against John Shipp and others, had entered demurrers to the complaints on two grounds: First, that the State law gave stockmen the right to pasture on the public domain unless the owners of the land took action to shut them off by fencing; second, that the privilege to pasture on public lands has been conceded so long by the United States that it has become a right, and cannot be taken away without special act of Congress.

Judge Wellborn gave an oral opinion on both these points in overruling the demurrer. In first commenting on the claims that the State law permitted the pasturing of the public lands unless it was fenced, he declared that this would not hold; as he construed

the term "public lands" to signify the Federal lands lying open on the market for pre-emption or homesteads, and that when the Government had reserved certain holdings from pre-emption they ceased to be "public lands." On this ground the State would hold that the forest reserves were the private property of the National Government in the same way that other land is held privately, and could be defended from trespass.

Secondly, the Judge held that it could never be considered, whatever the State law might be with regard to the holding of public land and the right to pasture, that the Federal Government could be deprived of its control of the land or the right to protect it in the Federal courts.

As to the claim that the graziers had a right from long presence to go upon the Federal domain until Congress should decree otherwise, the court held that Congress had never given any such right; that it had been exercised through many years through the sufferance of the Executive Department of the Government, and the Executive Department could take it away at any time, should the public interest and the purpose of forming the reserve require it. The court, therefore, overruled the demurrer.

District Attorney Flint, in speaking of Judge Wellborn's decision, afterward stated that this decided the law fully, and would give the Federal authorities absolute control of the situation, suits could be brought to recover damages in case of trespass, and injunction proceedings be made to bear on the stockmen if they threaten to go upon the reserves.

#### THE PROPOSED BIG BASIN PARK

The preliminary examination of the redwood property offered for sale in the vicinity of the Big Basin, has gone on with great thoroughness on the part of the Commission, some of the members having gone over every available trail and followed all the streams. All the members have spent several days in the Basin, accompanied by an advisory committee consisting of timber-land owners and men long familiar with timber values. Timber cruisers have been sent over the tracts offered to the Commission, and a surveyor has meandered the streams, where more information was needed. Whatever the decision of the Commission, it will be based on as clear an understanding of the situation as timber purchasers ever have.

It will be remembered that no purchase money can be paid from the State treasury until after January 1, 1902.

#### THE LESSON OF A VETO.

TO THE EDITOR OF THE SIERRA CLUB BULLETIN:—The State of New York, since 1885, has expended above \$3,000,000 in acquiring title to forest lands in various parts of that State. During the session of the Legislature last winter, a bill appropriating \$200,000 for the purchase of further land within the area outlined as the "Adirondack Park" in the northeastern part of the State, passed both houses, but was vetoed by Governor Odell. The writer has no knowledge of the latter's point of

view generally on such economic problems as forestry or the water-supply of the commonwealth, but the words of his veto express a principle that ought to prevail in legislation everywhere, particularly in regard to irrigation and forestry appropriations. Governor Odell says: "In my judgment the time has arrived to consider what the policy of the State is to be with reference to the acquirement of land in the Adirondacks for the forest preserve. Over two millions of dollars have already been expended for that purpose, and as yet no comprehensive plan has been finally determined upon as to the State's policy and the amount that shall be expended in carrying out the improvement for the preservation of the State's forest and water supply. Until a definite scheme shall have been adopted, it seems to me unwise to make small appropriations annually." The justice of this comment will be seen when it is known that forest students and experts have for some years remarked the singular negligence of New York, in view of its great expenditures for forest land, in delaying the establishment of any system whatever by which the forest products could be properly utilized from a forester's point of view. In the latter's judgment, a State preserve acquired for forest purposes, and then allowed to lie idle is an anomaly. It seems that the New York Forest Preserve Board and the friends of the Park have also failed to formulate a comprehensive plan for the completion of the park and utilization of the forest and water-supply, although the State has willingly expended millions in the acquirement of land. It ought to be evident that no bill appropriating the money of taxpayers should be passed, unless it specify as far as possible the mode of expenditure, the objects, and the early reports of such work accomplished, as will reasonably show the utility of the expenditures. If a bill is not as clear as the nature of the case will permit on these points, then it is the duty of a Governor to object to it. At the next session of the Legislature, the California Water and Forest Association will probably renew their effort to have a bill passed appropriating a sum of money for surveys of reservoir sites in aid of irrigation works. Many of the reservoirs if built upon such sites will benefit the larger and very wealthy landholders. It is here suggested that the framers of the bill not only consider the advisability of making the requirements as to the results to be accomplished through the expenditure of the funds explicit, but that they make the use of the appropriation contingent on the contribution of an equal sum, by vested interests to be benefited by the bill. There is little doubt that any California Governor and Legislature elected next autumn will approve a bill constructed along such lines.

A MEMBER OF THE CALIFORNIA WATER AND FOREST ASSOCIATION.

